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The Bradshaw Lecture

ON

EXOPHTHALMIC GOITRE AND ITS TREATMENT.

Delivered before the Royal College of Physicians of London on Nov. 7th, 1905,

BY GEORGE R. MURRAY, M.A., M.D. CANTAB., F.R.C.P. LOND.,

HEATH PROFESSOR OF COMPARATIVE PATHOLOGY IN THE UNIVERSITY OF DURHAM; PHYSICIAN TO THE ROYAL INFIRMARY, NEWCASTLE-UPON-TYNE.

MR. PRESIDENT AND GENTLEMEN,—In the first place I must thank you very sincerely for the great honour which you have conferred upon me by your invitation to deliver the Bradshaw Lecture here to-day. When I read the list of distinguished physicians who have preceded me in this lectureship I feel that my best efforts can only fall far behind the admirable contributions made by them to the science and art of medicine by means of this lecture. A few years ago when I had the honour of delivering the Goulstonian Lectures in this theatre I selected the Pathology of the Thyroid Gland as my subject and devoted a considerable portion of one lecture to the pathology of exophthalmic goitre. On this occasion I propose to consider the clinical symptoms and treatment of that interesting disease. This selection has been made because a considerable number of cases of this malady has come under my observation, of which I have tabulated 180 for the purpose of this lecture. 170 of these cases occurred in women and 10 in men, the frequency of the disease in the two sexes thus being in the proportion of 17 to 1.

THE THYROID GLAND.

Some enlargement of the thyroid gland is one of the most frequent symptoms of exophthalmic goitre. The great frequency of this symptom is well shown by my series of 180 cases. In 172 of these the gland was enlarged at the time the patient was examined. In five others it was not enlarged at the time but the history clearly showed that it had been so at an earlie stage of the disease. In only three cases there was no enlargement at the time of the examination and no history of any previous enlargement could be obtained. So that in only 1¾ per cent. of my cases was a goitre entirely absent. In a series of 261 cases collected by other observers 27, or rather more than 10 per cent., had no goitre. Mr. Arthur Maude of Westerham, to whom I am greatly indebted for the generous loan of the manuscript of an unpublished work on exophthalmic goitre, has found some enlargement of the thyroid gland at one time or another in all his cases. I am therefore inclined to believe that if all cases were observed frequently throughout the duration of the malady some enlargement of the thyroid would be found in almost every one. It is often difficult to ascertain when the goitre has first appeared, as a moderate degree of enlargement may be attained before it attracts the notice of the patient or her friends; indeed, it is frequently discovered for the first time by the medical man who looks for it in association with other symptoms complained of. As a rule no discomfort is occasioned by the goitre as long as the enlargement is slight or moderate in degree, so that it is not infrequently first noticed by the patient while looking at herself in a mirror, or a gradual tightening of the collar or neck-band leads to a careful examination of the front of the neck when the swelling is discovered for the first time. Sometimes, however, a sense of fulness or constriction is felt in the neck but such sensations naturally are more distinct when the enlargement is considerable. An enlargement of the thyroid gland is often the first sign of Graves's disease which is noticed. In a certain number of cases a simple parenchymatous goitre is present for a considerable length of time before any symptoms of exophthalmic goitre develop, as in at least 14 of my cases. In two cases the goitre had been present for more than 30 years and in other cases for periods of from three to 25 years before the symptoms of Graves's disease began to develop.

As a rule the enlargement of the thyroid gland is not very great. For the sake of convenience the enlargement may be described as "slight" when it can be distinctly felt on palpating the gland but is not always sufficient to attract the attention of the patient, as "moderate" when it is easily both seen and felt, and as "considerable" when it is obvious and disfiguring. In 51 cases the enlargement was slight, in 58 moderate, and in 29 considerable. In one the goitre was enormous. It had been present for 34 years and the circumference of the neck was 23 inches. In 33 cases the size was not stated in the notes. In eight cases there was no enlargement to be detected, though in five of these there had been a goitre at an earlier stage of the disease. As a rule the enlargement of the gland is uniform, so that the natural shape is maintained. As the right lobe is larger than the left in the normal subject we find the difference accentuated by the increase in size. In only six of my cases was the left lobe observed to be larger than the right. In a few cases adenomata or cystic adenomata occur in the enlarged gland. In a few cases unilateral enlargement has been associated with homolateral exophthalmos. I have not, however, seen an example of this. The size of the goitre may vary from week to week, or even from day to day. It may increase after unusual excitement or exertion or during the menstrual period, to subside again in the course of a few days. The consistence of the gland varies somewhat in different cases and in the same case at different times. As a rule it is softer to the touch than the normal gland but in cases of some duration it may become harder and smaller owing to the development of fibrosis. The strong arterial pulsation in the carotid arteries, which is so frequently visible at the side of the neck, is not infrequently transmitted to the goitre. The veins running over the surface are in some cases visibly dilated. A fine thrill can sometimes be felt when the finger is laid on the goitre, especially near the outer edge of each lateral lobe; this was detected in 25 of my cases. A murmur may also be heard in many cases over the goitre which may be either systolic in time and therefore arterial, or continous and therefore venous in origin. In 63 of my cases a bruit was audible. In 41 of these it was systolic in time. In 19 there was a continuous venous murmur which in ten cases became much louder with each cardiac systole or was accompanied by a superadded systolic murmur. In 31 cases no murmur was heard and in the remaining 84 it was not noted.

CIRCULATORY SYSTEM.

In all cases of exophthalmic goitre there is an increased frequency of the pulse. At first palpitation may be only felt occasionally, disappearing entirely between the attacks. Such attacks may be induced by unusual exertion. A characteristic feature of them, however, is that they may come on without any apparent reason when the patient is lying still in bed. In some cases the tachycardia comes on gradually and may hardly attract the attention of the patient at all. In rare cases the onset is sudden, as in one of my cases in which it came on during the night in a girl who had previously been in good health, the other symptoms of Graves's disease appearing within a few days. The pulse may be increased to any rate between 90 and 200 beats a minute, according to the severity of the case. There is often a great variation in the frequency of the pulse at different stages of the disease and also within short intervals of time in the same case as slight exertion or emotion often greatly accelerates the pulse for a short time. For this reason it is difficult to give any average pulse-rate for each case. In considering my own cases I have for the purpose of comparison taken the highest observed pulse-rate in each case. This was recorded in 178 cases; in the other two cases it was increased but the actual frequency was not noted.

Pulse frequency.	Number of cases.
Between 90 and 100	4
,, 100 ,, 110	12
,, 110 ,, 120	12
,, 120 ,, 130	35
,, 130 ,, 140	19
,, 140 ,, 150	47
,, 150 ,, 160	17
,, 160 ,, 170	14
,, 170 ,, 180	5
,, 180 ,, 190	7
At 200	6
	178

Thus in 101, or more than half the cases, the pulse was at times between 120 and 150. In 47, or more than a quarter, it was between 140 and 150. The high frequency of 200 was observed during severe attacks of palpitation. In one such attack the pulse-rate fell from 180 to 140 in the course of a few minutes and a quarter of an hour after the application of an ice bag to the præcordium it had fallen to 112. The pulse is usually regular, as irregularity was only observed in 12 of my cases. The action of the heart is similar to that which is produced in a healthy person by severe exertion for a short period or by some violent emotion. On inspection diffuse pulsation all over the cardiac area is generally visible extending as far to the left as the nipple line or beyond it. On palpation the impulse is felt over a larger area than usual. Taking the lowest and outermost point at which the apex beat could be distinctly felt in 93 of my cases, it was normal or internal to the left nipple line in 14; in 38 it was in the fifth left intercostal space in the nipple line; in 34 it was in the same space but from half an inch to two inches beyond the nipple line; in two it was in the sixth space in the nipple line and in two one finger's breadth outside the nipple line; and in three it was in the anterior axillary line. In these cases with great dilatation of the left ventricle there is a danger of sudden fatal syncope as one of these patients died suddenly during the night.

The heart sounds are very loud and distinct, the first sound at the apex especially being shorter, sharper, and louder than in the normal heart. The accentuation of the first sound may be so great that it is audible outside the chest. In one of my cases the first sound could be heard a yard away from the chest by the unaided ear, and in another at a distance of several inches. In the majority of early cases the sounds are clear and no murmur is audible. In the later stages, however, murmurs are not uncommon. A loud, rough systolic murmur is frequently heard over the inner end of the second left intercostal space. This murmur alone was present in 26 of my cases, in some of which it was almost purring in character. In 19 cases a systolic murmur was heard at the apex only, while in 18 cases a murmur was heard both at the apex and over the pulmonary area as well. In 45 no murmur was heard and in the remainder it was not noted. The character of these murmurs indicates that they are usually functional in origin and they resemble hæmic murmurs, although they occur in many cases in which there is no distinct anæmia. True valvular lesions may occur in cases of exophthalmic goitre but should be regarded as complications, as they are usually the result of antecedent rheumatism or chorea.

Of vascular symptoms the most striking is the arterial throbbing which is most noticeable in the carotids. It is variable in intensity and in some cases is felt more especially in the temporal or cranial arteries. Strong pulsation may also be felt at times in the abdominal aorta and in the femoral arteries. The radial pulse, as we have already seen, varies greatly in frequency but is usually small and of low tension, though the blood pressure was found to be normal by P. Marie in the two cases in which he measured it. Hæmorrhages from various parts of the body are occasional symptoms. Epistaxis is the most common, but hæmoptysis, apart from pulmonary tuberculosis, hæmatemesis, and bleeding from the skin have also been recorded.

OCULAR SYMPTOMS.

Exophthalmos effects such a striking change in the appearance of the patient that to many it is one of the most distressing features of the malady. Although so obvious when present it is important to bear in mind that this sign is entirely absent in many cases. A note was made as to the condition of the eyes in 170 of my cases. In 120 exophthalmos was present; in three it had been present at an earlier stage but had disappeared before I saw them. In 47 cases, or more than 25 per cent., there was no exophthalmos at all. Exophthalmos generally develops slowly but in some cases it comes on rapidly in the course of a few days. In cases in which it is present in a slight degree it may rapidly increase if there is an acute exacerbation of the other symptoms. It is usually bilateral and equal in degree in both eyes but in some cases it is unilateral or more marked on one side than on the other. The exophthalmos may vary from a slight fulness of the eyeball, over which the eyelids can still meet easily, to such marked projection that the sclerotic above and below the margin of the cornea and even the insertions of the recti muscles are visible and the eyelids cannot be brought together at all. In marked cases the eyes remain open during sleep. In one of my cases, which I examined while asleep in the daytime, the eyes were directed forwards and the lower edge of the upper eyelids only descended as far as the upper margins of the pupils, which were of medium size though fully exposed to a strong direct light from windows facing south in the middle of the day in the month of August; in other cases the pupils were contracted. The amount of prominence of the eyeballs varies in the same case from time to time. Patients who have this symptom in a marked form are very liable to suffer from attacks of conjunctivitis owing to the increased exposure of the surface of the eyeball to the action of dust and bacteria floating in the air which is all the more apt to occur when the retraction of the upper eyelid with absence of blinking known as Stellwag's sign is present as well. This sign may be present when there is no exophthalmos or it may precede its development. When it is present alone it imparts a somewhat staring or startled expression to the face. It was present in 70 of my cases, in 55 it was absent, and in an equal number it was not noted. This sign may vary in degree or even disappear at times in the same case. It may only appear under the influence of a strong emotion or when the eyes are suddenly turned in a new direction and disappear again at once. The delay in the normal descent of the upper eyelid when the eyes are directed in a downward direction, which is so well known as von Graefe's sign, was present in 49 out of 141 of my cases in which it was specially looked for. It is to be remembered that this sign was observed by Dr. S. J. Sharkey in 14 out of 613 patients, none of whom suffered from Graves's disease. In one of my cases von Graefe's was the only ocular sign present. In 36 cases it was associated with exophthalmos and retraction of the upper eyelids; in nine it occurred with exophthalmos but without Stellwag's sign. In 19 cases in which both exophthalmos and Stellwag's sign were present von Graefe's sign was absent. Weakness of convergence, as described by Moebius, has been observed in some of my cases, but as a rule I have not found it to be so marked as to be regarded as anything more than an indication of some slight weakness of the recti muscles. Paralysis of one or more of the external muscles of the eye has been described, especially by Mr. Maude, in a good many cases, the details of which are probably familiar to you. The paralysis may be partial or complete, bilateral or unilateral, and may involve a single muscle or all, causing complete external ophthalmoplegia, as in one of my own cases. The elevator of the upper lid usually escapes, though ptosis may occur alone without ocular paralysis, as in cases recorded by Mannheim and by West. The pupils are usually normal in size and in reactions and vision is unaffected. Lesions of the cornea such as have been described by von Basedow and von Graefe were absent in my cases. The eyelids are swollen in some cases, the exact cause of this being uncertain. It has been described by some as a circumscribed œdema of one or both eyelids, but in the cases which I have seen it has appeared to be more the result of looseness of the skin possibly associated with relaxation of the orbicularis muscle. Pigmentation of the eyelids is a common symptom. A rapid tremor of the eyelids occurs in some cases when the eyes are shut but disappears when they are opened.

NERVOUS SYMPTOMS.

The mental condition in exophthalmic goitre is peculiar and in some cases this may be noticed even before the other signs of the malady become apparent. The mental state in its typical form is one of subdued excitement or nervousness such as is seen in a person undergoing some trying ordeal. It may vary in different cases according to the natural temperament of the patient. Thus in some there is marked irritability of temper and trifling circumstances which would have passed unheeded in health become sources of acute annoyance. An intolerance of strangers, due partly to a reluctance to meet them on account of the facial appearance produced by the exophthalmos, occurs in some cases, and associated with it, or even independently of it, there may be a sense of great discomfort when in a crowded building, such as a church or theatre. I have not noticed the abnormal love of dress and craving for entertainments which have been described by Moebius. Some patients are very restless in movement, while others suffer from the peculiar restlessness of mind described by the late Sir J. Russell Reynolds as a "chorea of ideas." Some are always bright and optimistic, while others are discontented and melancholy. In spite, however,

of this peculiar mental state intellectual work of a high class may be accomplished by those suffering from Graves's disease. Thus one lady who was under my care during the greater part of a severe attack of exophthalmic goitre which lasted some seven years before she recovered occupied the time of her enforced leisure by acquiring a knowledge of the Turkish language. In some cases there are definite visual and auditory hallucinations. Careful inquiry is necessary to obtain a history of these hallucinations, as patients are often disinclined to mention their occurrence. In ten of my cases, in which there was no insanity, definite hallucinations occurred. In one case a man had been killed by an accident in the district in which the patient lived and some days after his burial the patient thought she saw him enter by the door. Another patient thinks she sees objects drop on to the floor from the chair or the door open, and on one occasion she heard a scrimmage in the yard and someone enter the house. In other cases figures or animals were more or less distinctly seen, especially on waking during the night. In one of these cases the faces of the figures were clearly recognised as being those of people who were dead who appeared just as when they had last been seen. In acute fatal cases various mental symptoms occur near the end which resemble those of the delirium of fever. F. Müller has observed stupor, terror, hallucinations, and confusion in such cases. In the cases of this class which I have seen the mental condition closely resembled that of a patient suffering from a severe attack of enteric fever or pneumonia with a mild form of delirium from which he could be roused to give rational answers to questions.

Actual insanity develops in a few cases of Graves's disease and should perhaps be regarded more as a complication than as part of the disease. In the experience of most general physicians the combination is a rare one though alienists, on the other hand, regard it as less uncommon. Thus Moebius has not observed a single case of undoubted "Basedow-insanity." As far as I am aware only three of my 180 cases developed insanity. In one of these there were suicidal tendencies for three months following parturition so that the condition was possibly puerperal in origin. In another case, that of a man who had melancholia with suicidal tendency, the insanity appeared to be due to the Graves's disease. In the third case, which I saw with Mr. E. M. Swanwick of West Hartlepool, a young lady, aged 22 years, had entered her brother's room just after his tonsil had been removed and saw the excised tonsil lying there, which gave her a shock. She then developed an attack of acute mania, during which she was very restless, striking at anyone within reach; if left for a minute she would jump out of bed and rush to the window, and she used bad language, declined to answer questions, and refused medicine, saying that it was poison. She afterwards recovered completely from the mania. Dr. T. S. Clouston,[1] at the Edinburgh meeting of the Neurological Society, showed three cases of exophthalmic goitre in which the patients were affected with ideas of persecution and of grandeur and he expressed the opinion that insanity ultimately developed in a much larger number of cases than was generally supposed. Insomnia occurs in a few cases and headache, especially of a migrainous type, is not uncommon. A fine regular tremor of the hands is one of the most constant symptoms of exophthalmic goitre. The importance of this symptom has only been fully recognised since its great frequency was pointed out by P. Marie in France and its characters were so well described by Mr. Maude in this country. This tremor is present in the great majority of cases. This symptom was observed in 163 of my cases; in seven it was absent and in the remaining ten it was not noted. It sometimes appears quite early in the course of the disease; more frequently, however, it does not develop until a later stage, when other symptoms have been present for some little time. The tremor is most easily observed when the arms are bared and fully extended forward with the palms directed downwards. It varies considerably in its amplitude in different cases and even in the same case at different periods. In the slighter forms it may not attract the attention of the patient at all, whereas in severe cases the patient may be unable to write or to carry a plate without dropping it. The movement, which in slight cases is confined to the hands, is due to rapidly alternating contractions of the flexors and extensors of the wrists. In more severe cases the pectorales, serratus magnus, and the erector spinæ at times also show a tremor. The tremor is often present in the legs as well as in the arms and is generally symmetrical, though it is sometimes more marked on one side than the other. The rhythm is rapid and regular. Careful tracings taken by P. Marie in 11 cases showed that the movements occurred at the rate of from 8 to 9·5 a second, the average being 8·5. Wolfenden and Williams give the rate of vibration as 10·8 to 11·5. The amplitude of the tremor varies considerably; it is greater when the patient is excited or when the symptoms are at all acute. Painful cramps may occur in the feet and legs, especially at night, and have been observed by Dr. Hector W. G. Mackenzie in 13 cases. In two of these the muscular spasm was similar to that which occurs in tetany. Similar attacks have also been seen by Mr. Maude. As far as my own experience goes the cramps are rare symptoms. Convulsions sometimes occur and may simply be due to epilepsy developing as a complication. In some cases, however, convulsions occur which appear to be the direct result of the exophthalmic goitre. I shall have occasion later to refer to a case in which convulsions occurred while the patient was taking rodagen. Paraparesis, or sudden giving way of the legs, is a symptom first described by Charcot. In some cases the legs simply feel weak, as if they would give way in walking; in others the legs actually do give way and the patient falls to the ground. 21 of my patients complained of this symptom. 11 stated that the legs only felt weak, while in seven the legs gave way and five fell down or were unable to walk in consequence. One of them was unable to rise again afterwards without assistance. Other forms of functional paralysis may occur in Graves's disease but time will not permit of their consideration on this occasion.

[1] Brain, 1903, p. 300.

THE SKIN.

The skin is usually rather pale, though it is sometimes flushed, and it is frequently moist or greasy in appearance as a result of the increased sebaceous secretion. To the touch it is warm and clammy. More or less profuse perspiration occurs at times in many cases. This moist condition of the skin was present in 113 of my cases and actual sweating occurred in 92. The sweating may be quite local, being limited to the head, hands, or feet, or one side of the body. Profuse offensive night sweats were described by von Basedow.

Pigmentation of the skin in one form or another was observed in 42 of my cases. In its most common form the pigmentation affects the exposed portions of the skin of the face, neck, and hands, the colour being just like that produced by prolonged exposure to the sun. As a rule the pigmentation is most marked in those parts of the body where the skin is naturally darkest. Thus the skin round the eyes and covering the eyelids may be quite deeply pigmented while the rest of the face is unaltered. The skin of the face may, however, be uniformly pigmented or the colouration may occur in dark brown patches on the cheeks. The neck, the axillæ, the areolæ of the nipples, the genital organs, the upper part of the inner surface of the thigh, and the flexures of the joints, are all common situations in which pigmentation occurs. Portions of skin which are subjected to pressure or friction by clothing are liable to become dark in colour, as, for example, over the spines of the vertebræ, round the waist, or below the knee when garters are worn. Variations in the distribution of the pigmentation occur in different cases. In one of my cases the outer edge of the areola and the front of the leg showed the pigmentation most distinctly, while in another there was general diffuse pigmentation of the face, neck, forearms, and hands with darker freckle-like patches on the backs of the hands and forearms. The pigmentation may be so general as to resemble that of Addison's disease or it may occur in small patches like freckles or in large, sharply defined areas. The mucous membranes are usually unaffected. Leucoderma has been observed in several cases. Various skin rashes have been observed to occur, the most common of which are erythema and urticaria. Two distinct varieties of œdematous swelling may occur. Firstly, ordinary œdema of the lower limbs or elsewhere may develop as a result of heart failure or when the case is complicated by the presence of anæmia, varicose veins, cardiac or renal disease. The œdema is then symmetrical and pits easily on pressure. Secondly, irregular œdematous swellings of the skin may appear in different parts of the body, such as in the eyelid, on one hand or foot, or elsewhere. In one of my cases a considerable œdema

developed in one leg below the knee, for which no local or general cause could be discovered. The diminution of the electrical resistance of the skin has been carefully investigated by several observers and is simply the result of the increased activity of the sweat glands in consequence of which a larger amount of moisture is present in the deeper layers of the skin, which is thereby rendered a better conductor. The hair is often profoundly affected. In many cases it becomes ill-nourished and loose so that it comes out freely. Loss of hair was noted in 29 of my cases. Not only is the hair of the head affected, but that in other parts of the body may also be lost. In two of my cases there was complete baldness and in one of these the eyebrows, eyelashes, and some of the pubic hair had also been lost. The hair may turn rapidly grey and Mr. Maude quotes a case in which it turned white in a few days.

THE ALIMENTARY SYSTEM.

The alimentary system is apt to be affected in various ways. The appetite varies in different cases and at different stages of the disease. During the earlier stages of the malady the appetite is frequently increased. In some cases it is even voracious and there is a constant craving for food, of which large quantities are consumed. Some alteration in the appetite was noticed in 20 of my cases. In four it was diminished and in 16 it was increased or voracious. In ten others it was stated to be good. Thirst was only complained of in seven cases. Vomiting may occur from time to time, commencing and ceasing again suddenly, independently of any kind of food. These "gastric crises" are generally painless and watery mucus alone is brought up which may be streaked with blood. In one of von Graefe's cases vomiting occurred from ten to 20 times a day for a month. Dr. J. Dreschfeld in seven cases in which these attacks occurred observed that the breath had a peculiar sweet odour while the urine smelled of acetone and gave the diacetic acid reaction. Vomiting should always be regarded as a serious symptom to be checked as soon as possible, as in some cases it comes on acutely and persists until the patient dies from exhaustion. Vomiting occurred in 11 of my cases. In three of these it was severe and continued until death.

An increased frequency of defæcation was present in 20 cases. Thus patients who in health were wont to pass a single daily motion defæcated twice or thrice in the 24 hours. This symptom must be carefully distinguished from diarrhœa, as the motions, though more frequent, are otherwise normal in character. The most common disorder of the alimentary canal, however, is diarrhœa, which generally occurs in sudden, short, painless attacks of one, two, or three days' duration, coming on without apparent cause. Some three or four light-coloured watery motions are passed in the 24 hours, while the tongue remains clean and there is little constitutional disturbance. The attacks may recur from time to time. They sometimes are very severe; thus in one of my cases from 12 to 18 motions were passed in the 24 hours and some cases have been recorded in which 30 or 40 motions were passed in the day. Diarrhœa occurred in 53, or more than one-quarter, of my cases; constipation was present in 16.

Albumin is occasionally found in the urine in small quantities. It is usually intermittent and the urine contains no casts. In 30 of my cases in which the urine was examined for albumin a trace was found in six. In only three of these was sugar found to be present; in one of them the urine contained 15 grains of sugar and in another 40 grains to the ounce. As a rule this glycosuria may be distinguished from diabetes by the fact that it does not progress but tends to disappear as the patient improves. I have, however, seen a case recently, which is not included in this series, in which diabetes, with thirst, wasting, and other symptoms, occurred as a complication. In the large majority of cases the urine is quite normal.

In a considerable number of women who suffer from exophthalmic goitre menstruation is abnormal. In 170 cases in women menstruation was affected in 45. Amenorrhœa, which is not uncommonly present during the earlier stages of the malady, existed in 24 of my cases for periods varying from five months to eight years. In several of them menstruation returned as the other symptoms of the malady abated. In the other cases the variations in menstruation were either unimportant or were accounted for by some local cause. In a few cases the disease has first developed during pregnancy. Mr. Maude quotes two cases in which this occurred; in each of them the placenta became detached and the fœtus died. In one case the symptoms rapidly subsided after delivery. Pregnancy may also occur in a woman who is already suffering from exophthalmic goitre. When this does occur it is important to remember that marked improvement may take place during the pregnancy, as in three cases observed by Charcot, and that it should therefore be allowed to proceed to a natural termination.

Nutrition varies considerably in different cases but some diminution in weight occurs in many cases. Loss of weight may take place during the early stages of the disease, even in spite of the appetite being increased and the amount of food consumed larger than usual. Some loss of weight was noted in 67, or rather more than one-third, of my cases. The actual loss varied considerably in different cases but amounted in some to as much as three or four stones. In one male case the patient when first seen had a simple parenchymatous goitre. When examined again two and a half years later he was found to be suffering from a severe form of exophthalmic goitre and had lost from two and a half to three stones in weight. A regain of weight is a favourable sign of general improvement. Thus one of my patients weighed only 6 stones when the disease was fully developed. When she was seen again eight years afterwards she weighed 9 stones 11 pounds, a gain of nearly 4 stones, and the other symptoms had subsided.

TREATMENT.

The treatment of exophthalmic goitre is a matter of considerable difficulty, as it is a much more formidable task to control the excessive secretory activity of the thyroid gland than to supplement its deficiency, as in the treatment of myxœdema and cretinism. In estimating the value of any particular line of treatment in Graves's disease we have to remember how variable the natural course of the disease may be in different cases, so that it is no easy matter to determine in any given case whether an improvement in the patient's condition is really due to the treatment adopted or is merely incidental to the natural course of the malady. In spite of this difficulty, however, we can, I think, in the majority of cases with the means which are now at our disposal not only relieve special symptoms as they arise but also favourably modify the course of the disease as a whole.

In dealing with this part of my subject I propose to consider separately the general hygienic treatment, the influence and uses of various drugs, the electrical treatment, and, finally, the most recent results obtained by the use of antitoxic sera and rodagen.

The general management of the patient is of great importance and has, of course, to be modified according to her character and social position and the stage of the disease. In cases of great severity, and in less severe cases during the exacerbations which occur from time to time, complete rest in bed is essential. This may be continued for periods varying from a fortnight to six weeks, according to the progress made. In cases of moderate severity a rest in bed for two or three weeks at the commencement of a course of treatment is advisable. In slight cases treatment in bed is not required. In severe cases in which rapid loss of weight has occurred the rest in bed should be combined with over-feeding, as much as four or five pints of milk being given in the 24 hours in addition to the regular meals. Little difficulty is usually experienced in inducing such patients to take a large amount of food, as they not infrequently have a voracious appetite. Strict isolation, as in Dr. Weir Mitchell's method of treatment, is not, however, required. After this period of rest, or in less severe cases from the beginning, it is important as far as possible to regulate the patient's mode of life. As a considerable amount of rest is very important it is a useful plan to insist on at least 12 hours' rest in bed, say from 10 P.M. to 10 A.M. In addition to this the patient should lie down for an hour or two during the day. As much time should be spent in the open air as possible. The combination of rest with open air, as in the treatment of pulmonary tuberculosis, gives excellent results.

Without giving further details it will suffice to say that the patient should be induced to lead as quiet and easy an outdoor life as she can, freed as much as is possible from anxiety, from undue mental effort, from uncongenial social duties, and from unsuitable physical exertion.

ELECTRICITY.

One of the most valuable means of treatment of Graves's disease is undoubtedly the systematic application of a faradic current. This treatment, which may be employed alone or along with medicinal treatment, should be carried

out wherever possible, as in my cases the best results have been obtained with patients who have persevered with it. The most satisfactory method of applying the current is that suggested by Sir Victor Horsley. Two flexible electrodes, about four inches long and two inches wide, covered with flannel or wash-leather, are moistened with a warm salt solution; one is applied in front over the goitre, and the other at the back of the neck. These electrodes are fitted with straps and buckles at the sides by means of which they are fixed in position. They are then connected with the secondary circuit of a dry cell faradic battery, a water rheostat being included in the circuit so that the strength of the current can be regulated as desired. The current should be just strong enough to produce a prickling sensation in the skin but not so strong as to be unpleasant. The current should be applied in this manner for an hour twice in the day and in some cases it may be applied for as much as three or four hours in the day. A patient very quickly learns how to apply the current herself. This treatment can be carried out easily in the case of private patients and in a hospital, but it is unfortunately not adapted for hospital out-patient practice in which so many of these cases are seen. The drawbacks are the time and trouble it entails, so that steady perseverance on the part of the patient is essential. I have observed steady improvement and practical recovery take place in several cases in which this treatment has been systematically carried out.

X Rays.

The remarkable effect x rays have been found to possess in bringing about a reduction in the size of an enlarged spleen in cases of spleno-medullary leukæmia has suggested that they might be of service in the treatment of exophthalmic goitre. In one of my cases in which this treatment was adopted no benefit was derived, indeed, the symptoms were somewhat aggravated, and so it was discontinued. Beck,[2] after excision of one lobe of the enlarged thyroid, exposed the other lobe to x rays. In two cases in which this treatment was carried out, in one 18 and in the other three months after the operation, which had only produced an improvement, a remarkable diminution in the nervousness and tachycardia was observed. In a third severe case, in which the x ray treatment was started a week after the operation by a daily exposure of at first five and then ten minutes, the improvement was immediate and rapid. At the end of a week the treatment was suspended for a week, when it was found that the pulse had fallen from 160 or 180 before the operation to 80, and the exophthalmos had nearly disappeared. After that the x ray treatment was given for five minutes each week. When seen five months after the operation the remaining half of the goitre had disappeared as had also the exophthalmos and tachycardia. It is, however, difficult to determine whether this satisfactory result is to be attributed to the operation or to the x rays, or to both. Dr. Stegmann[3] treated two cases of Graves's disease by x rays with marked success, each sitting occupying 15 minutes. The nervous and cardiac symptoms disappeared though the size of the goitre remained much the same. These results suggest that a further trial of x ray treatment should be made.

Drugs.

In a large number of cases, and especially those which are treated in out-patient departments, the treatment is practically confined to the administration of drugs, so that it is important to consider what influence they exert on the course of the disease. Fortunately, even in adverse circumstances one sees some cases do well on medicinal treatment alone. The number of drugs which have been recommended in the treatment of this malady is large, but as far as my experience goes I have only found a few to be of real service.

Arsenic is one of the most useful for routine treatment, small doses being given. A useful method is to order four or five minims of liquor arsenicalis to be taken three times a day, except during one week each month or during the menstrual period, for six, eight, or even 12 months. When the pulse-rate is over 100 ten or 15 minims of tincture of convallaria are added to the dose, as this drug appears to give better results than either digitalis or strophanthus in controlling the excessive pulse-rate. If nervousness is a marked feature in the case ten grains of potassium bromide may also be added to the mixture for a few weeks at a time. Belladonna is useful in some cases and may have some influence in checking the hypersecretion of the thyroid gland; of this, however, we have no actual proof. It may be used in some cases where excessive perspiration is a source of annoyance but it is not suited for prolonged administration. Iodide of potassium is, I consider, quite unsuitable, as it not infrequently aggravates the symptoms, and this is not surprising when we remember that thyroid secretion, which contains iodine in an organic combination, is being poured into the blood in excessive quantities. For the same reason thyroid extract, which is still unfortunately given in some cases, has not infrequently aggravated the symptoms and should therefore never be given. In some cases in which thyroid extract had been prescribed I have seen rapid improvement take place as soon as it was discontinued.

Suprarenal and thymus tablets have been of service in some cases.

Sodium phosphate in doses of 15 or 20 grains, which has given good results in the hands of some observers, has not appeared to me to produce any marked beneficial effect. The daily application of a red iodide of mercury ointment, of half the usual strength, over the goitre has appeared to be useful in many of my cases.

Special measures are not infrequently required in the treatment of urgent symptoms. The sudden attacks of diarrhœa, to which some patients are so liable, can be controlled by rest, liquid diet, and a mixture containing laudanum and dilute sulphuric acid. Persistent vomiting may be at times a formidable symptom and in several of my cases it has been uncontrollable, causing death from exhaustion. In these cases, morphine given either by hypodermic injection or in a suppository has proved more efficient than any other drug. Severe attacks of palpitation, in which the pulse was from 180 to 200, yielded to the application of an ice-bag to the præcordium.

Serum Treatment.

During the last few years the problem of the treatment of exophthalmic goitre has been approached in a more rational manner, based on our increasing, though still very imperfect, knowledge of the part played by the thyroid gland in the production of the symptoms already referred to. Endeavours have been made on several different lines to neutralise the harmful effects of the excess of thyroid secretion present in the blood. In the earlier experiments it was assumed that in health the function of the thyroid secretion is to neutralise or destroy certain products of metabolism present in the blood or tissues. When the thyroid secretion is lacking, either as the result of disease or removal of the gland, these substances were supposed to accumulate in excess in the blood. It was considered that this blood containing these bodies might conversely possess the power of neutralising the excess of thyroid secretion present in the blood in Graves's disease. Proceeding on these lines Ballet and Enriquez,[4] in 1895, first employed the serum of dogs from which the thyroid gland had previously been removed, and in which symptoms of athyroidism had appeared, in the treatment of exophthalmic goitre. They injected from 4·5 to 15 cubic centimetres of the serum with beneficial effects. Following up this same idea, Burghart and Blumenthal[5] considered that the blood of a patient suffering from myxœdema would have a similar antitoxic action when employed in the treatment of exophthalmic goitre. For this purpose they removed 200 cubic centimetres of blood from a fully developed case of myxœdema. The blood was mixed with an equal quantity of normal saline solution and chloroform and placed in the refrigerator for 24 hours. It was then filtered, first through linen, then through a Berkefeld filter, and after the addition of more chloroform replaced in the refrigerator. This fluid was injected into a girl, aged 15 years, who was suffering from a severe form of Graves's disease, in doses varying from 20 to 55 cubic centimetres, generally of 25 cubic centimetres, the total quantity injected amounting to 247 cubic centimetres in eight weeks. During this treatment the patient gained weight, the hair grew again, the exophthalmos diminished, the sweating and tremors were less, and the heart was quieter and more regular in action. The symptoms were, however, reported to have returned after the patient left the hospital. Burghart and Blumenthal

[2] Abstract, La Semaine Médicale, July 19th, 1905. p. 340.
[3] Brit. Med. Jour., August 26th, 1905, p. 460.
[4] Congrès des Alienistes et Neurologistes Français de Bordeaux, August, 1895.
[5] Deutsche Medicinische Wochenschrift, Sept. 21st, 1899, p. 627.

also made use of the blood of thyroidless dogs. For this purpose they removed the thyroid from eight dogs, two of which remained well and six developed tetany. These six were bled from the femoral artery. At first the blood was prepared as already described; later the dried precipitate thrown down by alcohol was used instead. The liquid was injected in doses varying from 15 to 25 cubic centimetres. The dried serum, one gramme of which was found to be equivalent to 10 cubic centimetres of the liquid, was given by the mouth in doses of from 1 to 1·5 grammes. Considerable improvement was observed in each of the cases treated. Moebius,[6] working in the same direction, employed serum prepared from the blood taken from sheep several weeks after thyroidectomy and reported favourably upon its effect given in five-minim doses three times a day. This serum, as prepared by Merck, is now to be obtained under the name of "antithyroidine." Schultes[7] treated a very severe case of exophthalmic goitre, with acute mental symptoms, with this serum with remarkable results. After a month's treatment on doses varying from 0·5 to 4·5 cubic centimetres thrice daily, the mental symptoms had entirely disappeared and the pulse-rate decreased from 140 to between 80 and 90. The circumference of the neck decreased from 44 to 42 centimetres. The tremor diminished so that the patient could again thread a needle. The exophthalmos was unaffected; except for this the patient appeared to have made a good recovery in a very short time. The after-history is not given. P. Sainton and B. Pisante[8] treated three cases, first with the glycerinated blood, and later with the serum, of a thyroidless sheep. In one case the result was considered to be a complete and permanent cure, and in the other two marked improvement took place. Attention was specially drawn by these observers to the favourable influence of the treatment upon the tachycardia as evidence of its efficiency. Thus in the first case the pulse decreased from 140 to 80, in the second from 125 to 90, and in the third from 130 to 80. Preference was given by them to the oral administration of the serum, which proved to be more active than the glycerinated blood. All three cases had previously resisted other medicinal treatment, the first having been treated by thymus extract, the second by electricity, and the third had been in a stationary condition for three years. Leyden,[9] who has employed Moebius's serum, rodagen, and Madsen's tablets of dried blood from a thyroidless goat, was unable to decide that any one of them was decidedly more efficient than the others, though he appears to have obtained good results with rodagen, which will be referred to again. My own experience of Moebius's serum is very limited, but I have not been able to observe any special effect in those cases in which I have employed it, and Dr. Hector Mackenzie, after an extended trial, came to the same conclusion. Of "thyroidectin," a new preparation of the blood of animals after thyroidectomy, I have as yet no practical experience. Lanz, working on similar lines to Moebius, considered that the milk of an animal from which the thyroid gland had previously been removed would contain the same substances as the serum and might therefore be used instead. Lanz obtained good results in the treatment of six cases by this method. The best method of carrying out this treatment appears to be to employ the fresh milk from a thyroidless goat, the whole of the milk of one goat being consumed by the patient in the 24 hours. When the fresh milk cannot be obtained, the dried milk may be employed instead, and is sold under the name of rodagen. W. Kuhnemann[10] has recorded a case of well-marked exophthalmic goitre, in which after other treatment had failed great improvement took place while taking half a drachm of rodagen three times a day. In the course of five or six weeks' treatment the circumference of the neck diminished from 35½ to 34 centimetres. The pulse, which before treatment was between 135 and 145, diminished to 90. The weight increased from 97 to 109 pounds. The patient was able to walk better uphill without dyspnœa. An apical systolic murmur and the tremors disappeared. When the rodagen was discontinued, the pulse within a few days increased to between 106 and 120, and the weight decreased. On resuming the rodagen improvement again took place and was maintained after it was discontinued.

I have not employed the fresh milk of a thyroidless goat but shall now shortly refer to one of my cases which was treated by rodagen. The patient was a young woman, aged 22 years, who had first developed symptoms of exophthalmic goitre some 12 months before her admission to the Newcastle Royal Infirmary on Jan. 16th, 1905. She had well-marked exophthalmos and considerable enlargement of the thyroid gland; the pulse was 140 and she had fine tremors of the hands and was, in fact, a typical example of Graves's disease. She remained in the hospital until the end of March. She was given one drachm of rodagen thrice daily from Jan. 18th for one week only as the supply failed, again from Feb. 3rd to Feb. 24th, and again in half-drachm doses from March 8th to April 2nd, so that altogether she took 15 ounces of rodagen while she was under treatment. For about one week, during which the rodagen could not be obtained, she took one drachm of sodium phosphate each morning instead. After she began to take the rodagen a steady improvement took place. The pulse, which at first varied between 100 and 140, fell to between 96 and 116. The tremors diminished. On Feb. 20th the temperature rose from normal to 103·8° F. and she developed an acute tonsillitis. On the 24th, that is, after she had taken the rodagen continuously for three weeks, she became pale and collapsed at 7.30 A.M.; the temperature, which the night before had been 102°, fell to 99°. At noon the temperature was only 95·2° and the heart-beat, which during the four previous days had been accelerated to between 120 and 160, fell to 32 per minute. The skin was cold and moist. She was somewhat cyanosed and a systolic bruit could be heard at the apex. The rodagen was discontinued and brandy and strychnine were given. The pulse at 2 P.M. was 36; at 4 P.M., 44; and at 11.30 P.M., 96. On the following day the patient appeared to be in her usual condition but the pulse was only 88. Two days later, on the 27th, the pulse again fell at 6 A.M. to 76, at 7.20 to 64, at 8 to 44, and at 8.30 to 42. At 10.15 it was only 38. After this it gradually increased in frequency and was 62 at 11.45, 52 at 1.45 P.M., 46 at 4, 88 at 8, and 96 at 11 P.M. During the morning of this day, between 7.20 and 11 A.M., she had numerous attacks in each of which the heart, which was, as already described, beating slowly, would stop altogether for several seconds; a convulsion then took place which lasted two or three seconds. The patient was conscious of the onset of the convulsion but lost consciousness for a second or two at the end of it. One or two of these attacks occurred while I was auscultating the heart and the long period of asystole was remarkable. The slow pulse was irregular at the time. After 11 A.M. she had no return of the attacks. During the month of March the pulse varied from 64 to 114 but was only as high as 100 on ten days. Rodagen was again given in half-drachm doses thrice daily on March 8th and continued until she left the hospital on April 2nd. I have ventured to detail this case as I have never seen symptoms like these before in a case of exophthalmic goitre and am therefore inclined to attribute them to the action of the rodagen in too large doses. As no untoward symptoms occurred when half-drachm doses only were given later and the patient left the hospital very considerably improved, I think this remedy is worthy of more extended trial, but it should be used with caution in doses not exceeding half a drachm.

As the symptoms of exophthalmic goitre are due to the over-activity of the thyroid gland and improvement takes place when atrophic changes occur in the gland it would be a rational means of treatment to endeavour to induce such degenerative changes in the secreting cells of the gland by means of specific cytolysins and so to lessen its activity. Thus Mankovsky[11] introduced the thyroid glands of dogs into the peritoneal cavity of cats at intervals of a fortnight. After three doses he injected the cats' serum into healthy dogs. This was followed by symptoms like those which develop after thyroidectomy and by degeneration of the epithelium of the gland. Goutschakukov[12] by injecting dogs' thyroid into rams prepared a sheep's serum which he considered to be thyrotoxic as its use was followed by tetany associated with loss of colloid, vacuolisation, and chromatolysis of the cells of the thyroid. Portis[13] also prepared a serum by injecting increasing doses of an emulsion of dogs' thyroid into the peritoneal cavity of the goat. When the goat's serum was subsequently injected into

[6] Neurologisches Centralblatt, 1901, No. 22.
[7] Münchener Medicinische Wochenschrift, May, 1902, p. 834.
[8] Revue Neurologique, No. 22, Nov. 15th, 1904, p. 1109.
[9] Medicinische Klinik, No. 1, December, 1904, p. 1.
[10] Münchener Medicinische Wochenschrift, No. 10, 1904.
[11] Russisches Archiv für Pathologie, 1902, pp. 571–91.
[12] Centralblatt für Allgemeine Pathologie und Pathologische Anatomie, 1902, Band xiii., pp. 121–24.
[13] Journal of Infectious Diseases, No. 1, Jan. 2nd, 1904.

dogs it produced depression, convulsions, vomiting, rapid breathing, hæmoglobinuria, and early death. In cases which survived longer there were some fever, lacrymation, and progressive loss of weight. Microscopical examination of the thyroid gland showed removal of colloid, desquamation and degeneration of the epithelial cells, followed later by the development of papillary proliferations. Marked degenerative changes were, however, found in the liver, spleen, and kidneys, so that the action of this serum is not solely *thyro'eazic*. It would therefore be unsuitable for the treatment of exophthalmic goitre, as degenerative changes would be set up in other organs as well as in the thyroid gland. MacCallum and, later, J. L. Yates[14] saw no results follow injections of a thyroid serum prepared for the dog in geese.

It has appeared to me that by working on somewhat similar lines it might be possible to induce the formation of antibodies in the blood, the serum of which might be employed in the treatment of exophthalmic goitre so as to neutralise the ill-effects of the excess of thyroidal secretion. It has been shown by several observers that not only sera which are antitoxic to certain bacterial poisons, like the antidiphtheritic serum, but also sera antagonistic to animal products can be produced. Thus Lepine[15] endeavoured to prepare an antithyroid serum by first injecting thyroid extract into a goat, later feeding the animal on gradually increasing doses of minced thyroid until it was able to take as much as from 20 to 25 lobes of the sheep's thyroid a day. The serum prepared from the goat when injected into a dog caused diminution in the excretion of urea and in large doses somnolence and slowing of the pulse, which was taken as an indication of interference with the activity of the thyroid gland. This serum, however, has apparently not been employed in the treatment of exophthalmic goitre.

In my own experiments I endeavoured to prepare an antithyroid serum in as simple a manner as possible, first of all from rabbits[16] and more recently from a goat. In the first experiments several rabbits were fed on sheep's thyroid extract for a month or more. Each rabbit was killed by bleeding and the blood was collected with aseptic precautions into sterilised flasks. After standing for 48 hours the serum was decanted and 0·2 per cent. of carbolic acid was added to it. Two cases of exophthalmic goitre were treated with the serum, in doses varying from five minims once a day to seven minims three times a day. Both cases improved under treatment, but the amount of improvement was not greater than might be expected from rest in the hospital and ordinary medicinal treatment and I was unable to attribute any specific effect to the use of this serum. More recently I prepared a serum in a similar manner from a goat. In this case, however, the period of preparation was much longer. A young she-goat, nine months old, was selected. Sheep's thyroid extract, the liquor thyroidei B.P., was employed throughout. This was at first injected beneath the skin and from March 9th to April 26th 13 injections were made, the doses ranging from 0·6 cubic centimetre to 5 cubic centimetres, 27·5 cubic centimetres being injected altogether. As localised abscesses developed after several of the injections the method of administration was changed and for a period of two months, from May 17th to July 17th, the extract was given by the mouth in doses varying from two to eight cubic centimetres. In all, during the period 86 cubic centimetres were given in 22 doses, which thus averaged about four cubic centimetres, or one drachm each. On July 24th 400 cubic centimetres of blood were withdrawn from the internal jugular vein by means of a curved hollow needle into a sterilised flask while the goat was under the influence of an anæsthetic. After coagulation had taken place 170 cubic centimetres of clear serum were decanted into sterilised bottles, 0·5 per cent. of carbolic acid being added to it. Two cases have been treated with this serum.

The first case was that of a single woman, aged 22 years, who after being much frightened by a dog developed symptoms of exophthalmic goitre some six weeks before her admission to the Newcastle Royal Infirmary. At this time she had very marked exophthalmos associated with retraction of the upper eyelids and von Graefe's sign. The thyroid gland was moderately enlarged. The pulse was 120, regular, and of medium tension. Systolic murmurs were audible at the apex and over the pulmonary area; otherwise the heart was normal. The skin was moist and pigmented in places. There was a marked fine tremor of the extended hands and she was nervous and restless, so that the case was a good typical example of the disease. Treatment was commenced on July 26th by first giving five minims of the serum three times a day. The dose was increased to seven minims on the 28th and to ten minims on August 1st. The pulse then had gradually decreased to 100, the nervousness and restlessness had diminished and the goitre appeared to be getting smaller. On August 5th the dose was increased to 20 minims—that is one drachm in the day—and with the exception of two days continued up to August 19th. During this time the pulse varied between 106 and 120, and the exophthalmos became slightly less marked. The weight remained practically unaltered. In this case, although some improvement took place, it was not more than usually takes place in hospital on ordinary treatment and no special effect could be traced to the use of the serum.

The second case was that of a young woman, aged 23 years, in whom the symptoms of exophthalmic goitre had first developed about four months before she came to the Royal Infirmary on July 22nd. On admission she had slight uniform enlargement of the thyroid gland. The exophthalmos was slight and the ocular symptoms were absent. The pulse was 126, small, regular, and easily compressible. The heart's apex beat was in the fifth intercostal space, one finger's breadth outside the nipple line. A rough systolic murmur was audible over the pulmonary area but not at the apex. The skin was moist and pigmented and there were other minor symptoms which I need not detail. She was given five minims of the goat's serum three times a day on July 26th, the dose being gradually increased up to 20 minims by August 5th. This dose, with the exception of two days, was continued up till August 19th. The pulse varied between 104 and 120, and there was an increase of eight and a half pounds in weight. The general condition also improved but, as in the other case, no special effect could be attributed to the use of the serum.

The risks of surgical treatment are unfortunately so great that I do not consider partial thyroidectomy is advisable in exophthalmic goitre. I have only seen this operation performed in two cases, but both patients died within an hour or two. We must, however, remember that Kocher's results in 59 cases, quoted by Dr. Hector Mackenzie,[17] show 76 per cent. of cures and improvement in 14 per cent., with a mortality of only 6·7 per cent. If operative treatment is undertaken a local anæsthetic only should be employed, as much of the risk appears to be due to the use of general anæsthesia.

We must, on the whole, conclude that at the present time in the great majority of cases the best results are obtained by general hygienic treatment combined with the use of electricity and certain drugs, and that as yet no serum or other animal product can be considered to give better results than these older methods of treatment.

[14] University of Pennsylvania Medical Bulletin, Nos. 5-6, 1903.
[15] Lyon Médical, Nov. 29th, 1903.
[16] THE LANCET, August 27th, 1904.
[17] Brit. Med. Jour., Oct. 28th, 1905, p. 1062.

GLASGOW UNIVERSITY CLUB, LONDON.—This club will dine at the Trocadéro Restaurant on Friday, Dec. 1st at 7.15 for 7.30 P.M. Professor Walter Raleigh, professor of English literature in the University of Oxford, will preside and applications for tickets should be addressed to the honorary secretaries, 63, Harley-street, London, W.

SOCIETY OF ARTS.—The Society of Arts will commence its 152nd session on Nov. 15th with an opening address from the chairman of its council, Sir Owen Roberts. Among the papers set down for the Wednesday evenings before Christmas is one on the Commerce and Industries of Japan by Mr. W. F. Mitchell, at which the Japanese Minister will preside. Sir William Preece will also give an account of the doings of the British Association in South Africa last summer and Mr. F. Martin-Duncan will describe the recent applications of the cinematograph to scientific purposes. A course of Cantor lectures by Professor J. A. Fleming on Electric Waves will also be given before Christmas. Among the courses of lectures announced for the meetings after Christmas is one under the Cantor Trust on Modern Warships, by Sir William E. White, and one under the Howard Trust, by Professor Silvanus P. Thompson, on High-speed Electric Generators. The usual course of juvenile lectures will be given this year by Professor Herbert Jackson, the subject being Flame and Combustion.

A Lecture

ENTITLED

CHIPS FROM A SURGICAL WORKSHOP.

Delivered at the Medical Graduates' College and Polyclinic at the Opening of the Session on Oct. 2nd, 1905,

BY HOWARD MARSH, M.C. CANTAB, F.R.C.S. ENG.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF CAMBRIDGE; CONSULTING SURGEON TO ST. BARTHOLOMEW'S HOSPITAL AND TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, W.C.

GENTLEMEN,—On such occasions as the present it becomes more and more difficult to procure suitable material for an address. The field of surgery is like a crowded mine. There are so many workers that the amount of genuine ore which any one person can secure is very small. Nuggets are for the most part out of the question. And it is difficult not only to find a good subject but also an appropriate title. To-day, that I may not waste your time by propounding mere generalities or travelling once more over too familiar ground, I propose to introduce various matters, from here and there, which seem to possess at least some interest. And as they have little connexion with each other I have called them chips.

ON SURVIVALS WHICH CUMBER THE GROUND.

We are all apt, in varying degrees, and however unconsciously, to be led by tradition and custom, and, without thinking, to go on doing things merely because others have done them before us. And it is not only interesting but profitable to notice the extent to which the field of surgery is dotted over with views and methods which, although the tide of progress has long passed them by, still tenaciously hold on and escape their final quietus. Some of these survivals are merely curious. Here is a probe which is still sold, the proximal end of which is triangular and sharp-pointed like the old form of bayonet. It looks fit for nothing but to run into the palm of anyone who is rash enough to use it. When I first saw it I asked instrument makers and surgeons what it was for but no one could tell. At last, however, in 1866, a surgeon, who was then over 70 years of age, said it was used in cases of necrosis to find out whether bare bone into which the sharp end was pressed was loose. Another equally curious survival is to be seen in Liston's long splint as it is often made. Its lower end is deeply notched and there are two holes in its upper end. The notches, as you know, were to secure the bandage used, figure-of-8-wise, to fasten the foot to the splint. The holes above were for the ends of the perineal band. Happily, that futile and barbarous appliance was discarded when weight extension was introduced about 40 years ago. Yet the notches are still cut, though, strange to say, the holes in many specimens of the splint have disappeared.

But some survivals are not, like these, mere harmless curiosities. They are methods of treatment which are open to serious objection and which should be definitely attacked and got rid of. A few may be briefly noticed. A sprained knee-joint in a healthy young adult is still sometimes kept on a back splint for three weeks and then the patient is allowed to walk about with the splint still on. From first to last, the splint is a remnant of old-fashioned and out-of-date practice. It is wholly unnecessary. The straight and rigidly fixed position of the limb is irksome, or even painful. A pillow, allowing a little flexion and an occasional change of posture, is much more comfortable than a splint and allows the ready use of massage. When the patient walks the splint slips and the strapping or bandage above the knee, acting as a tight garter, keeps the joint full of fluid. In these circumstances the effusion and pain arouse fears of tuberculosis and the treatment is still continued. Let the splint, however, be removed and all the symptoms will soon disappear.

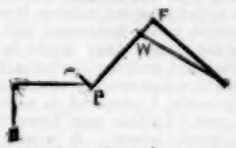
An elastic knee-cap is another survival which is sometimes used with mischievous effect. A patient complains of his knee, which is painful and a little swollen, and in obedience to custom he is forthwith ordered a knee-cap, although no accurate diagnosis has been make. Now such a case may be one of slipping semilunar cartilage, early osteo-arthritis, gout, or, as I lately saw, of syphilitic synovitis, for none of which is a knee-cap likely to be efficient. Positive objections to an elastic knee-cap are that it produces muscular wasting and is often very uncomfortable. I think it often does harm and seldom any good and I cannot but hope its days are numbered.

The various pads for flat foot are useless survivals. In flat foot the problem is how the plantar arch can be restored. But what case is there anywhere in the field of mechanics in which an arch can be raised by the support on which it rests? Moreover, the weight of the body makes the foot slide outwards off the pad, just as, in any other case, a weight slips down an incline. For my own part I can only agree with those who hold that the true principle for the treatment of flat foot in young subjects is, first, to remove the exciting cause—that is, the weight of the body on the plantar arches—by keeping the child during a great part of the 24 hours off his feet (flat foot in a child disappears when he is lying or sitting). Secondly, to remove the predisposing cause—that is, muscular weakness—by exercises and massage. I think it would be advantageous to surgery if these pads were consigned to limbo along with the elastic knee-cap.

REMOVAL OF INTEROSSEOUS PRESSURE IN DISEASE OF THE KNEE AND HIP.

Again, tradition and custom do much to hinder the general adoption of one of the great principles which must always govern the treatment of diseases of the knee and the hip—namely, the removal of interosseous pressure. To take the knee first. If, as the result of disease of the knee, the limb has become flexed its position must, if possible, be corrected. For this purpose two methods have long been in use. The limb has been forcibly straightened, or a McIntyre's back splint, flexed to correspond with the flexion of the limb, has been applied, and then gradually straightened by means of either a cog-wheel or a screw. Experience has frequently shown that both methods may not only aggravate the disease but lead to displacement of the ends of the bones. And the reason is clear. The tibia is used as a lever (Fig. 1) to

FIG. 1.



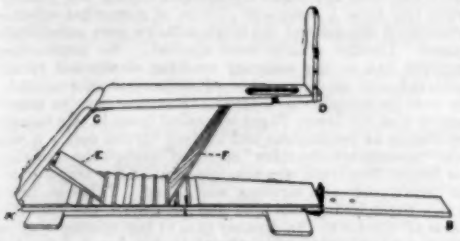
Showing weight extension acting as leverage. P, The power acting on the tibia (the lever). W, The resistance of the hamstrings. F, The fulcrum formed by the condyles of the femur. (Diseases of Joints and Spine, Cassell and Co.)

overcome the resistance offered by adhesions and by the hamstring muscles which are in a state of reflex contraction. And the tibia thus used has the condyles of the femur for its fulcrum. Thus the tibia and the femur are pressed firmly together—suddenly and forcibly during manipulation, slowly but continuously when the splint is used. But although this mistake of using leverage has often been pointed out, yet both manipulation and the screw-splint may still be said to be in pretty general use. And this, notwithstanding the fact that a method altogether different in principle and free from the objections I have alluded to has been established. I refer, of course, to extension, a force which properly applied leads to the cessation of reflex muscular spasm and thus secures the relief of interosseous pressure.

As the difficulty of applying extension to the limb in cases of disease of the knee in a satisfactory manner has no doubt delayed its general adoption I think it may be useful if I show a simple arrangement by which the difficulty is overcome. But it is advisable first to point out that the manner in which extension (by the weight and pulley) is applied is a matter of cardinal importance. If the limb is merely placed on a pillow so that the thigh, although supported, is not fixed, the weight appended to the foot obviously becomes (as in Fig. 1) the power acting on the tibia, which plays the part of a lever in overcoming the resistance of the hamstring muscles. Thus we are face to face with the startling result that weight extension, instead

of removing interosseous pressure, may, by acting as leverage, be all the while increasing it. The arrangement by which this miscarriage can be prevented is the following. The femur is flexed on the trunk, while the patient lies on his back in bed until the leg is in the horizontal position. The extent to which the thigh must be flexed to secure this will depend on the angle at which the knee has become fixed—e.g., if the knee, as the result of disease, is bent to a right angle, the thigh must be flexed at a right angle with the trunk. The limb is then placed on a padded wooden frame, constructed in the following way (Fig. 2). A B is a deal

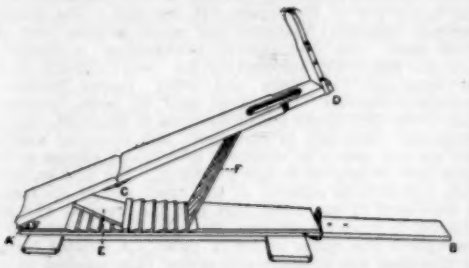
FIG. 2.



A, B, Base of splint. A, C, Thigh piece. C, D, Leg piece. E, F, Supports. A, C, Hinges.

board resting on the bed and steadied by cross-pieces; it is a little wider than the limb and long enough to reach from just below the patient's tuber ischii to the foot of the bed, against which it is lodged so that it cannot slip further down. This base, A B, is made of two pieces, the lower of which is telescoped into the upper so that by means of holes and a pin it can be lengthened or shortened as required. To this base the thigh-piece A C is hinged at A, while at C the leg-piece C D is hinged to A C. Thus A C can be placed at any angle with A B and C D can be placed at any angle with, or be fully extended on, A C (Fig. 3), and be so maintained by two supports E and

FIG. 3.



Showing the leg piece, C, D, fully extended on the thigh piece, A, C.

F, working on hinges which pass from A C and C D down to A B, in the upper surface of which a series of closely placed notches are cut. In any given case the ordinary strapping stirrup is applied to the leg, and the limb is placed on the frame, which is accurately arranged so that A C and C D form an angle exactly corresponding with the angle formed by the patient's thigh and leg. The pulley for the weight, supported on an upright at the foot of the bed, is placed exactly in the long axis of the leg—that is, in the direct continuation of the line C D. By this method the thigh is fixed, while the traction made by the weight tends to draw the tibia away from firm contact with the condyles of the femur and interosseous pressure is entirely removed. As muscular contraction yields the leg can be gradually extended on the thigh, so that the angle at which they meet becomes more and more obtuse. As this goes on the angle formed by A C and C D is also changed, by moving the supports into the proper notches in A B, so that it always strictly corresponds with the angle formed between the thigh and the leg. The position of the pulley, too, is changed, so that it is always exactly in the line of the long axis of the tibia. By degrees—the rate varying with the case—the limb passes into a position of full extension. The relief of symptoms which this method secures in acute conditions is often immediate—pain, heat, and swelling subside and within a few days the case presents an altogether different aspect. This apparatus is useful not only for the purpose of correcting the position of the limb in established disease but also for securing rest in an easy posture and for relieving muscular spasm in acute cases, such as acute rheumatism and septic infection following parturition or in gonorrhœal synovitis, or, again, in severe injuries of the joint or when the joint has been opened and is under treatment by irrigation.

Figs. 4 and 5 will show at a glance the faulty and the

FIG. 4.

To show that if weight extension is applied in hip disease when the leg is flexed on the thigh it acts as leverage. P, The power acting through the tibia on the femur (the lever). W, The resistance of the ilio-psoas muscle. F, The fulcrum formed by the acetabulum. (Diseases of Joints and Spine, Cassell and Co.)

FIG. 5.

Shows how extension is applied in hip disease so that leverage is avoided and interosseous pressure relieved. (Lent by Cassell and Co.)

correct method of using extension in the case of the hip-joint. In Fig. 4 extension is acting so as to convert the femur into a lever, the upper end of which has for its fulcrum the floor of the acetabulum, against which it is firmly pressed. In Fig. 5 extension is acting in an entirely different way. It acts so as to draw the head of the femur out of firm contact with the acetabulum and thus to relieve interosseous pressure. And the contrast between the results of the two methods as they present themselves in practice is obvious enough. The method shown in Fig. 4 produces, in cases that are in any degree acute, an immediate aggravation of the symptoms, especially of pain, which may become unendurable. The method illustrated by Fig. 5 often gives relief at once. I have frequently known a child who had for many weeks been kept awake for the greater part of the night by starting pains fall asleep as soon as the weight was applied, sleep for many hours without waking, and remain afterwards practically or absolutely free from pain.

I am sorry to have inflicted so tedious a description on my audience, especially as, to many who are present, it contains little that is new. But I have been tempted to avail myself of the present opportunity. Many workers here and in America have combined to lay down the true principles on which the mechanical treatment of diseases of the hip- and knee-joints should be conducted and the methods by which these principles should be carried out in practice. Yet, while these advances are ready to hand, met as they are by tradition and custom, they make their way into everyday use only by slow degrees.

It is the innovator or the inventor who is the important element in the field of surgery, as he is in every other department of human activity. Whatever is the result he has broken new ground. Like Lister, he may do work which changes the whole outlook; or he may throw out a fragmentary suggestion which is the unconscious first step in a

great advance; or, again, he may be all along on the wrong road and may advocate views or methods which later experience condemns. Yet even in the last case the inventor is useful. By raising questions which demand an answer he is instrumental in the acquisition of fresh knowledge. This was Sayre's position when he employed the plaster jacket for scoliosis. His method was erroneous, yet it led, by directing general attention to the subject, to the recognition of the principles on which the correct treatment of scoliosis is based. But the interesting point to notice, for my present purpose, is that although Sayre's invention soon encountered a verdict of such a hostile character that its fate was sealed, and although it was constantly pursued by adverse criticism, it yet survived for upwards of twenty years.

Such instances as I have mentioned will serve to remind us that in the field of surgery, in which such rapid advances are being made, old material must be got rid of by a constant process of active elimination in order to make room for the new. Many of us are old enough to remember how tradition and custom were a heavy drag on the establishment of ovariotomy and even of the aseptic method itself.

OUTLYING POINTS RESPECTING TUBERCULOSIS.

I now pass on to refer to some points in respect to tuberculous disease which have from time to time attracted my notice. All are aware of the danger of mistaking tuberculosis of the joints, especially in its early stages, for something else—rheumatism, "growing pains," a trick in an imitative child, &c. But it is equally easy to fall into an error in the opposite direction and to mistake other conditions for tuberculosis. This is because there is often nothing which is in any way distinctive or exclusive in the symptoms produced by tuberculous disease; nothing which enables the observer to say this is a case of tuberculosis, it can be nothing else. In other words, the clinical appearances met with in tuberculosis, and which are often merely those which characterise various degrees and stages of inflammatory action, may be produced by widely different causes. Among these clinical imitations of tuberculosis the following, so far as I have learnt, are the chief.

1. Prolonged synovitis, originally due to injury, and maintained by the want of temporary rest of the limb. The knee—to take this joint as a convenient example—may remain, after injury and continued active exercise, enlarged and the synovial membrane may be accurately mapped out, not by fluid in the synovial cavity, but by doughy thickening of the membrane, and there may be flexion, pain, surface warmth, and marked muscular wasting—in short, just such a combination of symptoms as usually indicates tuberculous disease. I have on three or four occasions seen cases which at first sight I felt convinced were tuberculous rapidly get well when they were treated by manipulation and massage. Searching for some means of discriminating in doubtful instances between cases which are purely traumatic and cases which are tuberculous I have been led to depend to some extent on the mobility or the fixed condition of the patella on the condyles of the femur. In tuberculosis the patella as a rule soon becomes clogged in its movements on the condyles of the femur, or even fixed by adhesions, while in synovitis due to injury only its movements remain perfectly smooth and free. I am not sure how far this point is trustworthy, it certainly cannot always be relied on; but on two recent occasions it was this consideration which led me to advise manipulation and massage. Both cases had the general features of tuberculosis and closely resembled others which I had erroneously believed to be tuberculous. In both recovery was uninterrupted and soon complete. Cases in this group are sometimes so obscure that I think, when after close study they are still doubtful, it is justifiable to advise cautious movement under an anæsthetic. For otherwise a patient who might have been well in a fortnight may be kept at rest for six or nine months and may then be cured by a bonesetter.

2. Some cases of infective arthritis closely resemble tuberculosis. In a man, aged 24 years, the right knee was considerably enlarged by what had exactly the appearance of "pulpy thickening" of the synovial membrane and was over-warm and painful. The disease was believed to be tuberculous and the limb had been on a splint for six weeks. My house surgeon, however, when the patient was admitted, found a gleet. When this was cured the joint soon and entirely recovered. I lately saw a woman, 35 years of age, who was believed to have a tuberculous knee, in whom the joint affection disappeared within two months after the uterus was curetted for chronic discharge following abortion. My impression is that infection as the cause of trouble in a joint or even in the spine is not very rarely overlooked.

3. I have notes, not of two or three, but of several cases of malignant disease in which a sarcoma has been mistaken for tuberculosis of the knee or some other joint, and I regard the mistake, grave as it is, as one which it is sometimes extremely difficult to avoid. In 1890 a lady arrived from a health resort in Germany with, as it was believed, tuberculous disease of her knee. For four months the joint had been swollen, painful after any movement, and flexed, the surface was over-warm and the patient's evening temperature was 102° F. On removing the silicate bandage which had been applied as a protection during the journey I found the knee a complete picture of somewhat advanced tuberculous disease and the thigh muscles were considerably wasted. Leather splints were applied. No improvement occurred, but on the contrary swelling slowly and steadily increased and an appearance of dislocation of the head of the tibia backwards was noticed. The case was so unsatisfactory that Sir James Paget was asked to see it. He regarded the disease as tuberculous and advised further rest. A week later "spontaneous fracture" occurred through the condyles of the femur. The truth was now apparent. After amputation of the limb a periosteal sarcoma was found. This was limited in size but it had grown into, and destroyed, the cancellous tissue of the bone. In another case in conjunction with one of the most experienced surgeons in London I treated the knee of a young lady 18 years old for what we believed was tuberculous disease for two months. Then, however, increasing enlargement of the internal condyle of the femur and the development of a solid swelling in the popliteal space led to the recognition of sarcoma. Amputation was performed immediately below the trochanters. A girl, aged 11 years, was admitted into St. Bartholomew's Hospital about ten years ago and was said to have hip disease. She was lame and complained of severe pain. On examining the patient I found that the position of the limb was natural and that although abduction, adduction, and flexion were all slightly limited the head of the femur rotated with perfect freedom in the acetabulum. This last feature, together with the normal position of the limb, made it practically certain that the case was not one of hip disease. But what was it? For two months this question could not be answered, but then a hard and increasing swelling clearly connected with the upper end of the femur was detected. The parents declined operative treatment and seven months later the child died. On post-mortem examination a periosteal sarcoma was found surrounding the femur directly below its neck and the lungs and other viscera contained secondary deposits. In a man, aged 23 years, lameness, pain about the hip and extending down to the knee, flexion, abduction, limitation of movement, and muscular wasting led me and others to diagnose tuberculous disease of the joint and to employ weight extension. The disease, however, proved to be sarcoma of the upper end of the femur. A boy, aged 11 years, was sent into the hospital who was believed to have hip disease. But the disease proved to be sarcoma of the ramus of the os pubis. A striking feature of this case was constant and severe pain referred to the knee. It was no doubt due to pressure on the trunk of the obturator nerve, after its emergence from the thyroid foramen. I have related this series of cases as evidence of the chance that sarcoma in the immediate neighbourhood of a joint may be mistaken for tuberculous disease of the joint itself. Fortunately, the mistake may now be avoided by the help of a good skiagram, a means of which no prudent surgeon will fail to avail himself in any case in which there is room for even a faint suspicion.

4. It is no unusual thing to meet with a joint affected with syphilis, which yet presents all the symptoms of tuberculous disease of low intensity. For instance, the elbow of a man aged 28 years, four months after a sprain, was still stiff, swollen, and over-warm, and the muscles of the arm were wasted. I treated the patient for tuberculous disease for six weeks without securing any improvement. Then when I found a syphilitic node on his tibia and gave him potassium iodide the elbow-joint began to improve and in a month was quite well.

5. Hæmophilia is so rare in England that few mistakes are likely to be made in respect to it. Yet I nearly committed one the consequences of which might have been disastrous.[1]

[1] Clinical Essays and Lectures. J. & A. Churchill. 1902. P. 273.

A boy, nine years of age, was sent into the hospital with an affection of the knee which was said to be tuberculous. The joint was considerably enlarged by fluid in the synovial cavity, painful, warm, and a little flexed. The symptoms had existed, but sometimes less and sometimes more pronounced, for about two months. I saw no reason whatever to question the diagnosis which had been arrived at. In fact, the appearances observed formed a complete resemblance to early and active tuberculous arthritis. I determined to open the joint and irrigate it with weak mercurial lotion; when, however, his father came to see him he quite casually mentioned that the patient was a bleeder. Under the influence of rest, elastic pressure, and chloride of calcium given internally hæmorrhage was arrested, then the the blood by which the joint had been filled was absorbed, and the boy was discharged in the course of three weeks.

Cases in which there is a Circumscribed Tuberculous Growth either in the Articular End of a Bone or in the Synovial Membrane.

I think everyone must occasionally meet with cases of joint disease which are so obscure that a positive diagnosis cannot be made. Some of these are, I believe, instances of circumscribed tuberculous growth either in the articular end of one of the bones or, as I wish particularly to emphasise, in the synovial membrane. The following case is a good example of circumscribed tuberculous growth in a bone near a joint. A farm labourer, aged 19 years, found that when his knee was at rest he felt no pain but if he walked even half a mile the joint became so painful that he could bear no weight on it. When I saw him he had been resting the limb almost constantly for two years. In appearance the joint was perfectly normal, flexion and extension were absolutely free, and the patella moved freely and smoothly on the condyles of the femur. There was some muscular wasting. As the case thus far was completely obscure I opened and fully examined the joint. It was quite healthy except that over an area of the size of a split pea the cartilage investing the inner condyle of the femur was dull yellow and thin. Beneath this I found a nearly spherical cavity, occupying fully a third of the condyle, filled with dried caseous tubercle and surrounded by sclerosed cancellous tissue. The joint was excised and recovery followed. A man, aged 20 years, complained that, apart from any injury, he had for four or five months felt pain and tenderness after exercise on the inner side of his left patella. On examination three months ago, after he had been resting the limb for a fortnight, there was nothing to be found except some wasting of the muscles of the thigh. But when, on seeing him again after he had been walking about for three days, I found a quite definite, low-crowned swelling as large as a florin on the inner side of the patella and obviously imbedded in the synovial membrane. Various forms of treatment have since been adopted but without benefit. Lately the swelling has become constant and is slowly increasing and the skin covering it is always slightly over-warm. The joint is to be explored. A boy, nine years old, had been lame for two months and had complained of pain from time to time, and the calf of his left leg was wasted. The ankle-joint was freely moveable and in front and on both sides quite normal in appearance. Seen from behind, however, the synovial membrane was so considerably thickened that the natural depressions on either side of the tendo Achillis were obliterated, just as they usually are when the whole joint is involved in disease. Thus it appeared certain that the synovial membrane posteriorly was tuberculous while all the remainder was healthy. The joint was kept at rest in a leather splint. The swelling slowly subsided. After five years there has been no return.

I am aware that I am offering meagre and incomplete evidence—I would rather leave it as a mere suggestion—but these and other instances make me believe that in some obscure cases the symptoms may depend, as I have said, on a circumscribed—perhaps small—tuberculous focus in the synovial membrane such as is often met with in a lymph gland, the epididymis, or, although much more rarely, in the breast. It seems easy to understand how it is that the tuberculous process may remain localised or be gradually brought to a standstill by the conditions in which it is placed. The liability to tuberculosis, of course, varies in different individuals. Some furnish a favourable soil; in others the soil is so nearly barren that from the first the bacillus finds itself in difficulties. It cannot thrive and extend its borders. By its presence, however, it acts as an irritant to the tissues in which it is placed, and these become the seat, in bone of sclerosis, in the soft parts of cicatricial thickening, with the result that the circulation of nutritive material is so much diminished that the bacillus and its products undergo necrosis. Then if the mass is small it may be absorbed; if large, as in the case related above, in which a caseous mass was found in the condyle of the femur, it may either remain securely walled up or it may lead to suppuration. In this event an exact reproduction of Brodie's circumscribed abscess in bone would be produced.

Bony Ankylosis in Tuberculous Arthritis apart from Suppuration.

I know of two museum specimens showing bony ankylosis occurring in tuberculous arthritis apart from suppuration. I did Syme's amputation for tuberculous disease of the ankle-joint and tarsus in a young adult. No pus had ever formed but the synovial membrane was thickened and pulpy. On dissection bony ankylosis was found to be complete between the astragalus and the os calcis. A girl's elbow gradually stiffened and became fixed at an angle of about 120°. Mr. W. Roughton of New Barnet excised the joint. There was bony ankylosis between the ulna and the humerus. Here, again, are the axis and the third cervical vertebra. They show no ulceration or alteration of outline as if suppuration had occurred but they are completely ankylosed. The history is unknown, so that possibly the disease was not tuberculous. I have several times found knee-joints the seat of tuberculosis but apart from suppuration become so completely fixed within six months as strongly to suggest the conclusion that bony ankylosis had taken place. And the remarkable fact has been observed that nothing more has been seen of any active tuberculous disease. The explanation I would suggest is that in some individuals a joint instead of falling an easy prey to tuberculous invasion becomes, as the result of the irritation which the bacillus produces, the seat of a plastic inflammation similar to that which produces ordinary callus and it is by this process that the joint surfaces are firmly united. In the meantime the bacillus inclosed in an area of diminished vascularity perishes and the tuberculous process is brought to an end. This speedy and, as it may be termed, natural cure of tuberculosis by plastic inflammation may very well be set against the inconvenience of the ankylosis by which it is attended.

The fact that bony ankylosis may occur in tuberculous joints without suppuration should be kept well in mind in clinical practice, for otherwise the mistake may, in a moment of optimism, be made of promising recovery with free movement. Even in cases which are recognised early and adequately treated ankylosis may occur. Nor can it, I venture to remind my hearers, be averted by the use of passive movement. On the contrary, passive movement will promote it by adding a mechanical to the pathological irritation which is already present.

The Use of Splints.

Then as to splints in the treatment of tuberculous joints. They are necessary in order that rest may be provided. But if ankylosis occurs parents will nevertheless blame the surgeon for using them. Such blame is entirely undeserved. Ankylosis is not in the slightest degree due to the splints. It occurred in Mr. Roughton's case and in the case of disease of the ankle and tarsus (*supra*), although no splint had ever been used. And splints render indispensable service by preventing deformity and keeping the limb in the most favourable posture for future use. Had the elbow joint been kept in a serviceable position while ankylosis was in progress it would not have been necessary to perform excision. Ankylosis in these cases usually occurs slowly, but the irritative effect of the bacillus and its products sometimes provokes so active a response that plastic inflammation may pass through all its stages and establish ankylosis with startling rapidity. Witness the following case. A girl, aged 11 years, had Pott's disease of the spine which in three months produced angular curvature in the mid-dorsal region. A plaster jacket was applied and horizontal rest for 12 months was prescribed. Just six months after this treatment was started a bone-setter put in "a button of the back" (the projecting spinous process) which he said was out and ordered the child to run about as much as she liked. The surgeon protested and prophesied disaster. But to his great surprise nothing of the sort occurred. A year later I saw the child in consultation with the surgeon concerned. There was the angular curvature still but no

other symptoms were present and the patient seemed perfectly well. After several years there has been no relapse. In a further particular this case was remarkable for tuberculosis which in three months had advanced so far as to lead to angular curvature was wiped out by surrounding plastic inflammation within a period of six months.

SENILE TUBERCULOSIS.

Senile tuberculosis is important from both a pathological and a clinical standpoint. As a morbid process it is of much graver import than is tuberculosis in the young. The tissues of the old, which show themselves easily capable of the repair of operation wounds, fractures, and other injuries, appear to have lost the power of resisting or even limiting tuberculous infection. I do not remember ever to have seen repair follow in a case of tuberculous disease of a joint in anyone over fifty years of age. In my experience the disease has steadily and often quickly advanced to suppuration, with wide burrowing of pus and destruction of the tissues. Thus, in a woman, 72 years of age, the left ankle-joint became rapidly disorganised by tuberculosis and pus burrowed widely along the neighbouring tendon sheaths. Amputation was performed. Two years later (aged 74 years) periostitis of the left ulna was speedily followed by suppuration. The abscess was opened and cleared and healing slowly followed. Two years later (aged 76 years) the right ankle was wrecked by tuberculosis. Amputation was necessary. Sound healing followed. After another two years (aged 78 years) the right knee became swollen and painful and soon suppurated. Amputation through the thigh was performed. No further outbreaks have occurred and the patient is now—considering her age—in fairly good health. Microscopic examination showed in all these joints conclusive evidence of tuberculous growth. I will only add that senile tuberculosis is, I think, more common than is usually supposed and that in its early stages its recognition is often very difficult, especially on account of its close resemblance to osteo-arthritis. Usually, however, it soon declares itself by producing an evening rise of temperature and by the occurrence of suppuration.

THE PARATHYROID GLANDS IN GRAVES'S DISEASE.

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IN view of the experimental evidence of the severe symptoms which are likely to follow upon removal of the parathyroid glands in animals it is, I think, important that attention should be directed to these glands in the human subject. In fatal cases of Graves's disease, of myxœdema, of tetany in children, and in cases of death following operations upon the thyroid gland, the parathyroid glands should be carefully examined. Although much work has been done from the physiological side there are no definite observations to show whether the parathyroids play any part in disease in man and there appears to be no literature bearing upon the pathological anatomy of these glands, except a thesis by Garnier on "Some Changes in the Parathyroid Glands in Infective Diseases" and a "Report of a Neoplasm of the Parathyroid," by de Santi. The interesting discussion at the Chelsea Clinical Society in March, 1904, on internal secretion raised questions of the greatest importance in connexion with the ductless glands and with those diseases which are dependent upon pathological changes in these glands. Allusion was made to the parathyroid glands by several speakers but it was evident that the properties of these bodies are, at least so far as the human subject is concerned, still unknown ground and that the question of any relation or distinction between the thyroid and parathyroid needs further elucidation.

The object of this inquiry is to ascertain whether there is evidence of any pathological change in the parathyroids in Graves's disease, more particularly in the acutely fatal form of the disease. A comparison of the acute symptoms in this condition with the results of parathyroidectomy in animals suggests that some changes might be found. I propose in the first place to refer briefly to the experimental evidence bearing upon this subject and to the symptoms which occur in animals as the result of operations upon the parathyroid glands.

Experimental evidence.—It is impossible here to do more than refer to the main results obtained in this direction. The work has been done by many observers, Edmunds, Welsh, Gley, Vassale and Generali, Moussu, and others. They appear to be in general agreement on the chief issues, which may be summarised as follows: 1. Removal of the parathyroid glands together with the thyroid produces in a large number of cases very acute symptoms and a fatal result. 2. Removal of all four parathyroids, the thyroid being left intact, produces the same acute symptoms but with a less frequently fatal result. 3. Removal of the thyroid alone leaving the parathyroids is followed by chronic symptoms of myxœdema and by trophic lesions. There are some differences in the results as regards the date of onset of symptoms and the relative mortality of the operations in the hands of the various observers; Vincent and Jolly have recently expressed a doubt whether it is practicable to remove the parathyroids without also removing the thyroid and they do not find the results of removing both sets of glands so frequently fatal as other experimenters, but they admit that when a fatal result ensues it is due to the absence of the glands and not to mere damage of the surrounding parts.

The experiments have been performed in various kinds of animals but the results appear to be most marked in the carnivora. The acute symptoms produced by removal of the parathyroids alone or of both sets of glands occur soon, or after a few days, and consist mainly of the following: tremors, a slow and unstable gait with contractures of limbs, emaciation and muscular weakness, tachycardia, vomiting and diarrhœa, scanty urine with albumin, attacks of dyspnœa followed sometimes by tetany and convulsions, and death. It is maintained that these acute symptoms do not take place when the thyroid gland alone is removed but only when the parathyroids are removed either alone or together with the thyroid. It is further stated by Edmunds and confirmed by others that after removal of the parathyroids in the dog the thyroid gland undergoes compensating hypertrophy with changes similar to those found in Graves's disease—namely, enlargement of the vesicles with alteration in shape from round to oblong or branched; intracellular growth takes place, the secretory cells become columnar instead of cubical, and the colloid contents of the vesicle tend to disappear. Edmunds has also observed some degree of exophthalmos or enophthalmos, according to the particular operation performed, but these results do not appear to be constant.

Cases of Graves's disease.—Two cases of Graves's disease which I may here relate are good examples of the assemblage of symptoms and the mode of death in the acutely fatal form of the disease, a form which is, on the whole, comparatively rare.

The first case was that of a married woman, aged 32 years, of temperate habits, who had always enjoyed good health until May, 1903, when she had a slight accident and ever since had been nervous and subject to attacks of palpitation. Her throat had been previously noticed to be getting larger and her eyes prominent; she was also liable to diarrhœa and was losing flesh. Owing to an increase in the severity of her symptoms she was admitted into Addenbrooke's Hospital on Jan. 18th, 1904. She had then all the usual symptoms of Graves's disease: tremor, a pulse-rate of 140, a goitre, and proptosis with Stellwag's and von Graefe's signs. She had slight pyrexia, persistent vomiting, and being very restless and excited she was placed in a separate ward. On Jan. 21st she became worse, some dyspnœa was noticed, and delirious mania commenced; her lungs were normal and there was slight dilatation of the heart. On the 22nd she began to be unconscious, her legs moved constantly up and down in the bed, the vomiting was incessant, the dyspnœa became more marked, the breathing being deep and frequent; the urine became very scanty with a cloud of albumin, no sugar, but diacetic acid and acetone were present, and a few hyaline casts were found; the bowels were constipated. An erythematous rash appeared on the legs and back, and on the same evening the pulse became 160 and feeble; the rate of the breathing increased and she became collapsed and died. On the day before death the temperature fell to 97·4° F. An examination of the blood

was interesting, the red cells numbering 6,250,000 per cubic millimetre and the white 45,000 per cubic millimetre, showing a very high leucocytosis even allowing for concentration of the blood. It was also noticed that the thyroid swelling was rapidly diminishing in size some time before death. No treatment was of any avail but she rallied slightly after a saline infusion into the basilic vein.

The post-mortem examination was made 15 hours after death. The heart was slightly dilated but was otherwise normal. The lungs were slightly œdematous. The kidneys were normal in size and showed slight congestion; the pyramids were injected but the cortex was normal. The liver was rather pale and fatty. The brain appeared to be normal and the pituitary body was of the usual size. The thyroid gland was enlarged and the vesicles were full of a watery fluid under some pressure which spurted out in a stream when pricked. The gland showed, microscopically, the changes usual in a recent case of exophthalmic goitre. The thymus was much enlarged, bilobed, and weighed 24 grammes. As regards the parathyroid glands only two could be found, after the most careful search in all the usual situations; altogether eight bodies were removed but only two of these were found after microscopic examination to be parathyroid tissue.

The second case was that of a single woman, aged 35 years, whom I saw with Mr. F. E. Apthorpe Webb in April, 1901. I am indebted to Mr. Webb for notes of the last illness. She was then suffering from Graves's disease. She improved with rest and ordinary remedies and after some months returned to her business. In the summer of 1904 she went to Switzerland and derived great benefit from the holiday. In December she had a return of her symptoms of Graves's disease with severe vomiting and she had to be fed by the rectum. She improved for a while but on Jan. 10th, 1905, she became very restless and excited with sleeplessness and maniacal symptoms. The vomiting persisted and some dyspnœa supervened. The pulse was so rapid it could not be counted. The heart was rather dilated but the lungs were normal. In the night of Jan. 12th she complained of acute pain in the left leg which became cold and she died suddenly. Permission was obtained to examine the neck only. The thyroid was much enlarged, somewhat firm, and the capsule was thickened. Microscopically, the gland showed the usual changes of exophthalmic goitre. As regards the parathyroid glands, only the two superior posterior glands were found; one of them was inclosed in the same capsule with an accessory thyroid.

The parathyroid glands in both these cases of Graves's disease showed the same changes. In all the glands there were gross changes consisting of extensive infiltration of fat. The fat was intruded between the columns of gland cells and in parts only a few scattered epithelial cells were left between the masses of fat; in fact the gland tissue was largely replaced by fat. (Fig. 1.)

The parathyroid glands were also examined in two other cases of Graves's disease. One, that of a man, aged, 49 years, who died from heart disease, had suffered severely from Graves's disease. The thyroid gland was much enlarged and showed microscopically the characters of Graves's disease; the thymus was persistent, bilobed, and enlarged; the parathyroid glands were infiltrated with fat but not so extensively as in the two cases previously described. The fatty infiltration was in process of formation and the small fat globules could be seen surrounding the fine capillaries and the gland cells appeared to be degenerating. It is difficult, however, in post-mortem cases to say how far the cell changes can be regarded as pathological owing to the time that must necessarily elapse before the tissue can be obtained. The other case was that of a girl, aged 22 years, with early but well-marked Graves's disease. The right lobe of the thyroid was removed by operation and on examination one parathyroid gland was found close to the stump of the inferior thyroid artery. The gland was fixed in Müller's fluid and formalin four hours after removal. There was no fatty infiltration but the cells of the gland appeared to be undergoing change. The protoplasm was diminished; the nuclei were large and crowded together. No tissue resembling thyroid or acini containing colloid were found in it. The microscopical appearances of the thyroid lobe were characteristic of Graves's disease.

In order to ascertain whether these changes in the gland can be regarded as of pathological significance in cases of Graves's disease, or whether they are found in other cases, it is necessary to examine the parathyroid glands promiscuously in persons dying from various causes.

The human parathyroids.—I have dissected out these glands in 26 cases of death from various causes. At first I experienced considerable difficulty in recognising them but I have derived great assistance on the subject from a paper by D. A. Welsh entitled "Concerning the Parathyroid Glands." In man there are four parathyroids, two on each side, all external to the thyroid gland. They are oval or circular in shape and are of a yellowish or fawn colour, thus differing in colour from the thyroid and from the accessory thyroids and lymph glands which abound in their neighbourhood. They are often imbedded in fat or attached to a pedicle of fat, but may sometimes be identified by a fine network of veins showing on the surface of the capsule. In the majority of cases a microscopical examination is necessary to be certain of their identity. Welsh gives their measurements at from 6 or 7 millimetres in length, 3 or 4 millimetres in breadth, and 1·5 or 2 millimetres in thickness; the largest was 15 millimetres, breadth 6 millimetres, and thickness

FIG. 1.

Normal parathyroid gland from a case of pneumonia; age of patient 36 years.

3 millimetres. The largest I found was 8 millimetres in length and 3 millimetres in breadth, and the smallest measured 2 millimetres in length and 2 millimetres in breadth. The average weight he gives at about 0·035 gramme, extending from a minimum of 0·010 gramme to a maximum of 0·100 gramme or even more.

Method of finding the parathyroids.—A transverse incision should be made above the thyroid cartilage and carried right through the pharynx as far back as the prevertebral fascia; the whole mass of glands, trachea, and œsophagus should be removed with the surrounding tissues down to the lowest rings of the trachea. It is only in this way possible to insure that the parathyroids are not left behind. The thyroid gland may be defined from in front and then the posterior surface should be carefully examined from behind and the cellular tissue stretched out between the thyroid and the œsophagus. If the specimen is fresh the posterior superior parathyroid will probably be seen underneath the cellular tissue where the posterior border of the thyroid gland touches the œsophagus and at about the level of the cricoid cartilage. If not, a little dissection will soon reveal the inferior thyroid artery, in close proximity to which lies the parathyroid. The posterior superior glands are one on each side and are most constant in position—namely, posterior to the inferior thyroid artery and about the level of the cricoid cartilage. In exceptional cases they may be found high up on the side of the pharynx or as low down as the sixth tracheal ring.

The anterior inferior glands are also two in number, one on each side, and are much more variable in position and more difficult to find. The two commonest sites are: (1) close to the lower edge of the lateral thyroid lobe, just in front of its posterior margin and anterior to the inferior thyroid artery, or a branch of this vessel; and (2) below the thyroid on the front or side of the trachea imbedded in fat. There are other sites also in which the glands may be found and which are carefully described at length by Welsh.

Histological structure.—The parathyroid is an epithelial gland inclosed in a fibrous capsule and is usually quite separate from the thyroid gland, but it may be inclosed in the same capsule, or just imbedded in this gland or in an accessory thyroid. It has no duct but it is penetrated by a central vessel which runs longitudinally through it, giving off branches. There is often some indication of division into lobules by fibrous septa and small islets of fat may be found in the course of the septa and vessels.

The specimens I have examined conform in structure to the types described by Welsh. He figures four main types of arrangement of the principal cells, examples of one or more of which may be found in most glands. These types may briefly be described as follows: 1. The principal cells forming a uniform mass practically continuous in every direction but interrupted at intervals by delicate strands of connective tissue and having on the whole slight vascularity. 2. The cells arranged in the form of masses showing a tendency in certain areas to become broken up into anastomosing columns between which is a connective stroma containing small blood-vessels. 3. The cells forming distinct branching columns which on section appear as discrete masses closely resembling the solid masses of epithelial cells in some forms of cancer. 4. A more advanced stage of specialisation in which the principal cells may form acini resembling an adenoma, the epithelial cells being usually large and columnar; the central lumen may sometimes be occupied by a small mass of colloid. In many of my sections the tissue was very vascular and engorged with blood.

In addition to the four cases of Graves's disease I examined microscopically the parathyroids in 18 cases of death from various causes—namely, accident, tubercle, pneumonia, Addison's disease, bulbar paralysis, Bright's disease, diabetes, leukæmia, cancer, convulsions, and old age. The ages of the patients were from one year to 71 years; 12 were female and six were male. 12 were between the ages of one and 50 years; the parathyroid glands in these appeared normal with the exception of one. The gland tissue was compact and practically free from the infiltration of fat (Fig. 2); the arrangement of the cells showed instances of the different types of gland tissue described above. The one exception was from a girl, aged 14 years, who died from burns. The parathyroid in her case showed some excess of fat and she was found to have an enlarged thymus weighing 18 grammes. The thyroid appeared to be normal but was not examined microscopically. Of six cases whose ages were from 50 to 72 years four showed well-marked fatty infiltration of the parathyroids; the one most affected was from a case of diabetic coma in a man aged 60 years.

It would be premature without further observations to regard this partial disappearance of gland tissue in the parathyroid and its replacement by fat as a pathological feature of Graves's disease or as associated with the severe symptoms in these fatal forms of the disease. It is clear that Welsh in his examination of 40 persons had met with this fatty infiltration, for he states with regard to it that it is "a condition which appears to be normal when present to a slight extent but which may be met in an extreme degree." The sentence is slightly ambiguous and he does not state in his article the ages or the causes of death of the persons in whom he found the fat in excess. The point may be of importance as it is possible that, similarly to my series, it may have occurred in persons above middle age or have been associated with changes in the thyroid gland. The parathyroid may, like some other glands, be of greater importance to the economy in early and middle life and degenerate later.

In none of the cases of Graves's disease did the parathyroid glands show any signs of compensatory hypertrophy or any evidence that the glands were becoming more specialised and forming colloid. It is difficult to say whether the fatty infiltration is preceded by atrophy or degeneration of the gland cells owing to the want of opportunity of obtaining fresh specimens in the human subject.

At first sight it would seem unlikely that the parathyroid glands which are not only minute but which also present so great variability in size and weight should possess important functions. However, the hypothesis that this gland is merely compensatory to the thyroid appears to be losing ground and the facts that it develops in chronological advance of the thyroid, that it has an epithelial structure which somewhat resembles the suprarenal, and that its removal in the hands of most observers gives rise to definite and severe symptoms in animals suggest that it should be regarded as an independent and essential gland. The parathyroid may

FIG. 2.

Fatty infiltration of the parathyroid from an acute case of Graves's disease; age of patient 32 years.

have some specific function in relation to the thyroid gland and its secretion and if it can also be proved that pathological changes occur in the gland in persons dying from Graves's disease it would have an important bearing upon the acute toxic symptoms in this complaint.

My thanks are due to Mr. G. S. Graham-Smith of the Pathological Laboratory, Cambridge, for preparing the microscopic sections and photographs and to Mr. H. Pritchard, house physician, Addenbrooke's Hospital, for the blood counts.

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Cambridge.

A CASE OF XANTHOMA DIABETICORUM.

BY WILLIAM J. PROCTER, M.B., B.S. LOND.

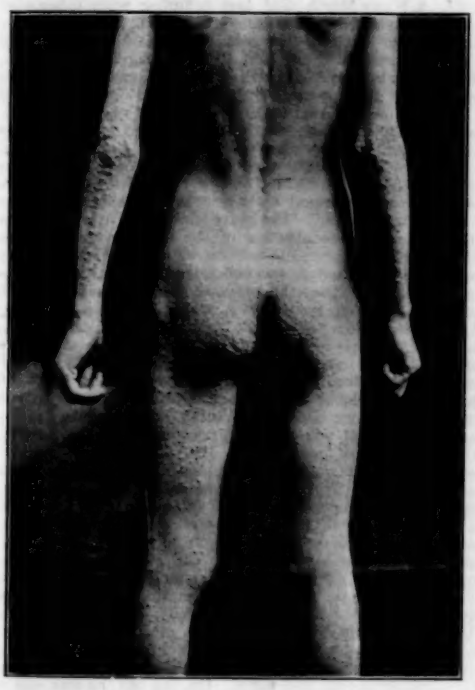
With Pathological Notes by R. N. SALAMAN, *M.A., M.D. Cantab., Director of the Pathological Institute, London Hospital.*

THE patient, a boy, aged 16 years, first consulted me on Oct. 3rd, 1903. For some time he said that he had been feeling very weak and felt unable to continue his work as stable boy. Even moderate exertion caused great fatigue. He had lost flesh to a considerable amount and this in spite of an enormous appetite. He suffered much from thirst and

drank in consequence much fluid. The quantity of urine passed was excessive and subsequent measurements showed an average of about ten pints per 24 hours. An analysis of the urine gave the following results: specific gravity, 1040; albumin, *nil;* and sugar, 5 per cent. The case was a typical one of diabetes mellitus. There was no discoverable cause for the disease. Both parents were alive and in good health and the patient's brothers and sisters were strong and healthy. There was no history of injury, fever, chill, or other exciting cause. This case was the more interesting to me as at the same time I had two other cases of diabetes mellitus in boys, each aged about 11 years.

Some little time later, about the middle of October, the boy was admitted as an in-patient at the Royal Surrey County Hospital, Guildford, and was treated there for some weeks but was discharged without improvement. On Feb. 2nd, 1904, an eruption appeared on the skin. It was papular in character and chiefly confined to the extensor surfaces of the upper extremities, to the flexor and extensor surfaces of the lower extremities, and to the buttocks. On the knees, elbows, and buttocks the papules were very numerous and often confluent. The papules were roundish and well defined in outline when discrete. They were hard to the touch, of bluish-red colour, and at the apex of most of them was a yellow head which appeared to contain pus. Puncture, however, revealed the fact that the yellow matter was solid. Isolated papules were present practically all over the skin and on the tongue and mucous membrane of the mouth. The eruption appeared rather suddenly and was first noticed on the knees and elbows. The eruption was not painful but itched very much. There was tenderness on pressure and sitting, except on a soft cushion, was attended with much discomfort. From time to time some of the papules disappeared and were succeeded by fresh crops.

I believe that a case in a patient so young has not hitherto been recorded. The disease is exceedingly rare. Up to the



year 1900 only 30 cases were on record, the ages being between 21 and 57 years.[1] In this case diabetes mellitus was typically present. In Crocker's case diabetes mellitus was present but was not suspected until the eruption drew attention to the real condition.

[1] Vide Crocker, Diseases of the Skin, vol. ii., p. 696.

Pathology.—"The diseased process appears to be anatomically of the same nature as ordinary nodular xanthoma but with more inflammatory phenomena and less connective tissue growth" (Crocker).

Dr. Salaman has made sections of the skin and his description of the microscopical appearances is appended verbatim.

Full-length photographs of the patient were taken and show very fairly the distribution of the eruption.

Pathological Notes by Dr. SALAMAN.—Beneath the epidermis, and separated from it as a rule by a narrow layer of more or less normal corium, lie massive groups of cells; the overlying epithelium is thinned out and in those places where the nodules are biggest the intervening corium has disappeared and the epithelium is only one or two cells thick. Deep in the corium are smaller nodules grouped around hair roots or sweat glands. In these positions the cells appear to be divided from pre-existing lymph spaces and channels. Growing out from the edges of the larger groups are straggling bands of cells in which occasionally appearances suggesting a lumen may be seen. Sections stained for fat show a great abundance of the latter, especially in the larger nodules; the fat exists in large globules; the cells containing it have the character of ordinary fat cells. In the outlying columns of cells and in the deeper nodules fat is more scanty and in smaller droplets. In the overlying epithelium fat is seen within the epithelial cells and in the neighbourhood of the larger nodules. The tumour cells, except where laden with fat, are mostly oval or cubical in shape and rather smaller than the cells of the Malpighian layer. They have a definite protoplasmic body and a slightly oval nucleus rather poor in chromatin. Stained with pyronin and methyl green no plasma cells are seen. Pigment granules are very scanty but are met with in the lower parts of the larger nodules.

Great Bookham.

ABSCESS OF THE SPLEEN IN ENTERIC FEVER.

NOTES OF TWO CASES, WITH ONE RECOVERY.

BY ARCHIBALD W. HARRINGTON, M.D. GLASG.,

LATE SENIOR RESIDENT ASSISTANT PHYSICIAN, GLASGOW FEVER HOSPITAL, RUCHILL.

THE rarity of abscess of the spleen in enteric fever may be judged from the fact that only four cases were noted in 577 necropsies at Hamburg and Leipsic.[1] Murchison[2] records two cases in which infarctions softened into a "puriform fluid" causing peritonitis and quotes five similar cases recorded by Robertson, Jenner, and Hoffmann. In an annotation in THE LANCET of July 8th, 1905, p. 95, a case recorded by Federmann in the *Deutsche Medizinische Wochenschrift* is summarised. This case was diagnosed after operation for purulent pleurisy when subphrenic suppuration was suspected from the bulging upwards of the diaphragm and the adhesion of the lower lobe of the left lung to it.

The difficulties of diagnosis are naturally very great and in a patient who is very ill a diagnosis may only be made on the onset of peritonitis and even then with difficulty. In my first case the abscess was discovered post mortem. The patient was extremely ill and semi-conscious. Some enlargement and tenderness of the spleen were noted and two rigors occurred. As there were numerous sloughs in the stools the rigors were ascribed to their separation. In the second case the diagnosis was based on the persistent pain, temperature, and sweating, pointing to suppuration in the left hypochondriac region. There were no rigors and no dulness over the base of the left lung. Splenic abscess seemed probable when the kidney was displaced far enough to enable one to make out that it was not enlarged or tender.

The bacteriology of the cases shows that the ordinary pyogenic microbes were, as is so frequently the case in suppuration in enteric fever, the causal agents. In Case 1, however, the bacillus typhosus was found in conjunction with the staphylococcus pyogenes aureus but the patient died from hæmorrhage in the acute stage of her illness

[1] Curschmann: Nothnagel's Encyclopædia, Typhoid and Typhus Fevers, p. 183.

[2] Murchison: Fevers, third edition, p. 634.

when one would expect to find numerous typhoid bacilli in the spleen. The excellent recovery made by Case 2 is quite in accordance with published results, 15 out of 27 cases having recovered.[3]

CASE 1.—The patient, a married woman, aged 46 years, was admitted to Ruchill Hospital on Dec. 3rd, 1904. It was impossible to fix the date of onset of her illness but she was said to have been ill for about two months and in bed for five weeks. Diarrhœa had been persistent and delirium had been present for a week. No further history could be obtained. On admission the patient was very ill and delirious. Bed-sores were present and both ears were discharging greenish-yellow pus. There were very notable cardiac weakness, some bronchitis, and diarrhœa with "peasoup" stools containing curds and sloughs. No enlargement of the spleen could be detected. Widal reaction was positive in a dilution of 1 in 20 in 30 minutes. The urine was acid and contained a cloud of albumin; the diazo reaction was present. She had a severe rigor shortly after admission and another on the following day. Although the temperature kept high and the diarrhœa continued the patient improved slightly. Progressive enlargement of the spleen was noted and on Dec. 17th it was easily felt and appeared to be tender. On that date two moderate hæmorrhages from the bowel occurred followed on the 18th by two large hæmorrhages. The patient, who was delirious throughout, gradually sank and died on Dec. 20th.

On post-mortem examination very extensive and deep ulceration of the ileum and cæcum was found. One large ulcer extended down to the peritoneal coat, which was extremely thin. The spleen was considerably enlarged and showed numerous adhesions at its upper end. On incision an abscess cavity containing a large quantity of pinkish thick pus was opened up. This cavity hollowed out practically the entire organ. The other organs showed the changes incident to continued fever, the heart muscle being very soft and pale. A culture from the spleen proved the presence of abundant staphylococcus pyogenes aureus and bacillus typhosus.

CASE 2.—The patient, a man, aged 33 years, was admitted to Ruchill Hospital on June 6th, 1905. He had always been healthy but was addicted to alcohol. His attack of enteric fever was sharp and attended by severe diarrhœa. Widal reaction was positive, in a dilution of 1 in 50, in 45 minutes. No enlargement of the spleen was detected. The temperature fell to normal on the twenty-third day of illness but a relapse occurred on the thirty-first day. The temperature was again normal on the thirty-eighth day. From that day the patient made steady progress till July 23rd (fifty-eighth day), when he complained of severe pain in the left hypochondrium. On examination marked resistance was present but no swelling could be made out. The temperature rose that evening to 102·2° F. There was no shivering. By July 30th the pain had considerably subsided. The temperature had remained elevated, being about 102° in the evening and falling to about 100° in the morning with some sweating. A swelling could be felt in the left hypochondrium just below the costal margin. On the 31st the swelling projected well beyond the costal margin and by its shape could be definitely distinguished as kidney. It was not tender when pressed bimanually but pressure in an upward direction elicited considerable tenderness. Dulness on percussion was continuous from the swelling to the upper border of the ninth rib in the mid-axillary line. A probable diagnosis of abscess of the spleen was arrived at and Dr. Farquhar Macrae, who saw the patient in consultation, agreed.

On August 2nd Dr. Macrae removed a portion of the twelfth rib behind. The spleen was found enlarged and very adherent to the kidney. No softening of the organ could be made out by the finger. Several unsuccessful punctures were made with a large needle and, finally, pus was found at the lower end of the spleen where it was adherent to the kidney. The pus, which was in small amount (one ounce), was thick and greenish yellow. A large tube was inserted and the wound was packed. The patient suffered a good deal of pain during the night following the operation. The temperature rose to 104° owing to some pleurisy from accidental tearing of the pleura during the operation. On the following day, however, the temperature fell to normal and the patient made steady progress towards recovery. The wound healed slowly but was completely closed on Sept. 18th. Smear preparations of the pus showed the presence of very abundant cocci and on culture the organisms found were staphylococcus pyogenes aureus and streptococcus pyogenes.

Convalescence was interrupted by an osteomyelitis of the upper third of the right femur, which was operated upon on Sept. 20th. A large sequestrum was removed. Staphylococcus aureus and streptococci were found in cultures from the pus. The patient is now well.

I am indebted to Dr. A. Johnston, physician-superintendent, for permission to publish these cases.

Glasgow.

[3] THE LANCET, July 8th, 1905, p. 95.

EXTRAORDINARILY RAPID DIMINUTION OF RENAL DROPSY UNDER CITRATE OF CAFFEINE.

BY H. D. ROLLESTON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO ST. GEORGE'S HOSPITAL;
AND
JOHN ATTLEE, M.D. CANTAB.,
CONSULTING PHYSICIAN TO THE MARGARET-STREET HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, CAVENDISH-SQUARE, W.

THIS case appears worthy of being recorded because of the phenomenal and rapid loss of œdema and corresponding diminution of weight in a case of parenchymatous nephritis which got steadily worse under the usual methods of treatment. In brief, the patient lost his œdema and four and a half stones in weight in 16 days—i.e., an average loss of four pounds a day.

A man, 36 years of age, was first seen by one of us (J. A.) on March 8th last suffering with œdema of the legs below the knees. His urine contained over 10 parts per 1000 of albumin (Esbach). This quantity of albumin remained constant till June 23rd, when it contained 8 parts per 1000 with a specific gravity of 1005; and on July 1st 2 parts per 1000, with a specific gravity of 1010; and on August 16th under 1½ parts per 1000. On March 20th Dr. G. L. Eastes reported: "Microscopy of centrifugalised deposit. The deposit is small in volume. It contains a moderate number of hyaline and granular casts, in a few of which are one or two tubal cells. There are also a very few renal cells free in the deposit. A trace of semen is present." The heart showed no hypertrophy or dilatation and no accentuation of the second sound over the aortic base. The pulse did not convey the impression of any increased tension and on two occasions the Riva-Rocci sphygmometer showed that the pressure was 132 and 130 millimetres of mercury respectively, which is within the limits of the normal for a healthy adult male. From March 8th to May 10th, in spite of various methods of treatment, the œdema steadily increased and then remained stationary till June 5th, the treatment being absolute rest in bed, hot-air baths, restricted fluid, absence of chloride of sodium (these two latter from May 10th), and various drugs—namely, citrate of potassium, magnesium sulphate, digitalis, jalap, acetate of ammonium, Baillie's pill, decoction of scoparium, and citrophen (a combination of citric acid and paraphenetidin). From May 10th to June 5th the patient was intensely anasarcous, the œdema extending up to the angles of the scapulæ, and the calves measured 15¾ inches, as compared with 11¼ inches when free from œdema. The abdomen was enormously distended, the skin was tense, and there was much free fluid in the abdomen. There were signs of double hydrothorax. It was remarkable, however, that the face and eyelids were quite, and the hands and arms almost, free from any puffiness. It may be noted again in this connexion that there was no sign of any dilatation of the heart. The clinical chart showed that the urine passed on June 4th measured two pints. On the 5th he was put on citrate of caffeine, seven and a half grains three times a day, which he continued to take till the 30th, when the dose was gradually diminished until it was discontinued entirely about July 8th. During this time he was taking restricted fluids carefully measured out—namely, one and three-quarter pints in 24 hours. The effect of the citrate of caffeine was manifest almost at once. The amount of the urine, which had previously been from two to two and a

quarter pints in 24 hours, increased steadily to five pints in the 24 hours on June 15th, reaching a maximum of seven and a half pints on the 25th and then gradually diminishing to four pints on the 30th, when there was only a slight trace of pitting over the ankles. The patient, who took the greatest interest in his case, very carefully superintended the measuring of the urine and calculated almost correctly the accompanying loss of weight for which we are responsible. He was not weighed till June 14th, when

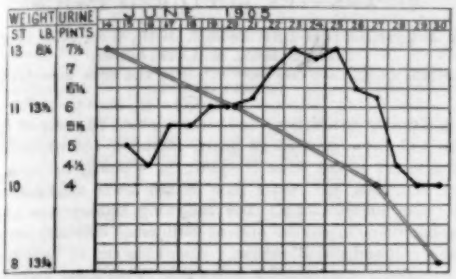


Chart to show the amount of urine passed (single line) and the loss of weight (double line) as the result of citrate of caffeine.

he had already lost a good deal of œdema; he then scaled 13 stones 8¼ pounds. In the next six days he lost 22¼ pounds, and the following six days 27½ pounds, until on June 30th he weighed 8 stones 13¾ pounds, a total loss of 64½ pounds, his normal weight being about 11 stones. After this his weight went up slightly, but this was due to increase of flesh, there being no return of the œdema. The daily amount of urine passed and the loss of weight from June 14th to 30th have been represented graphically on the accompanying chart drawn out for us by the Sister of McCalmont Ward, St. George's Hospital. The double line shows the loss of weight, and the single line the amount of urine passed. When seen on Nov. 6th he was in excellent health, free from œdema, and in active work. The urine had a specific gravity of 1017 and showed a haze of albumin only.

ACUTE GASTRIC AND DUODENAL ULCER.

BY R. E. SEDGWICK, B.A., M.B., B.C. CANTAB.

THE following case has been deemed worthy of record since in it is the history from beginning to end of what was to all appearances an ordinary case of acute gastric ulcer. The termination was, unfortunately, far from expectation, for despite a difficult operation, the skilful performance of which seemed to place the patient on the highway of recovery, a futher ulceration, this time in the duodenum, was followed by consequences so severe as to preclude further operative interference.

On Jan. 28th, 1905, I was asked to see a stoutly-built girl, aged 17 years, who was suffering from severe pain in the stomach which had been of two hours' duration and who had previously been noticed to be markedly anæmic. With the exception of the anæmia, of which the patient did not complain, she had always been well. Her appetite was very hearty and she had never had any gastric pain or vomiting. Constipation had been marked and there had been amenorrhœa for six months. The tongue was slightly furred and moist, the teeth were badly decayed, the temperature was normal, the pulse-rate was 84, and the respirations were quiet and abdomino-thoracic. The abdomen on examination showed pressure marks from corsets and was soft and freely moveable. Over the tip of the eleventh left rib there were pain and tenderness but not marked. There was also tenderness on pressure over McBurney's point. The bowels had been well moved with castor oil and the patient was ordered to stay in bed, with a diet of small quantities of milk-and-water, and was given a mixture of bismuth and soda. On the 30th all pain and tenderness had gone. The patient, who was very hungry, was ordered slop diet and a mixture of sulphate of iron and magnesia was given. She could get up. On the 31st she got up at 6.30 A.M. and had tea and bread-and-butter for breakfast. She felt quite well and did her work till 10 A.M., when again she had acute pain in the stomach and went to bed. At 2.30 P.M. when seen the gastric pain was severe and the epigastrium was tender to touch. The temperature was 96·7° F. and the pulse-rate was 100. The abdomen was flat and soft and the liver dulness was normal. The patient had vomited at about 2 P.M. The vomitus consisted of about eight ounces of tea and chewed bread-and-butter (unaltered). The smell was acrid. There was no appearance of blood. Five hours later the temperature was 102°, the pulse-rate was 120, and the abdomen was beginning to get rigid. The liver dulness was normal. The pain was general in the stomach but most severe *at the tip of the left shoulder*. The diagnosis was obvious and operation was decided upon. Dr. H. A. Lediard, who saw the patient with me before she was removed to the infirmary, pointed out that the case might have been considered as one of acute appendicitis in view of the marked tenderness in that region but for the previous history. The patient was given morphine subcutaneously and was removed to the infirmary. At 10.30 P.M. Dr. Lediard, on opening the abdomen, found a perforation on the superior anterior pyloric wall with a little stomach contents above the stomach. The ulcer was of the size of half-a-crown with a perforation of the size of a millet seed. The ulcer was excised, the gastric wound being stitched up transversely to the longitudinal gastric axis. The abdominal cavity was wiped out and the abdominal wound was completely closed. Feeding by nutrient enemata and saline injections ordered.

For a week the patient's progress was all that could be desired. The temperature and pulse-rate gradually fell to normal and the patient, who was fed per rectum, rapidly became hungry. On the third day after operation there was a little vomiting (two ounces) of dark green fluid and on the fifth day about an ounce of fluid was vomited which gave the guaiacum reaction. On the seventh day feeding by the mouth was begun, the abdominal wound was dressed, and the stitches were removed. The stools were normal. On the ninth day after operation the patient, who felt well till then, was at 1.30 P.M. seized with severe epigastric pain lasting one and a half hours. All food by the mouth was stopped and rectal feeding was instituted. She passed a good night but became very blanched about 6 A.M. on the morning of the tenth day and shortly afterwards passed a very copious stool containing much tarry blood. The melænic stools continued and despite all treatment short of operation—which the patient's condition forbade—she died in 48 hours, 11 days after the operation.

Necropsy.—A local post-mortem examination was made next day, of which the following are the notes. The weather was cold, with a south-east wind. The body was that of a well-developed, well-nourished girl, of a very pale waxy-yellow colour. There was no post-mortem lividity or hypostasis. Rigor mortis was not present. The scar in the epigastrium was sound. In cutting through the scar a small collection of pus was seen in the stitch track. The scar was not adherent to the visceral peritoneum. There was no gas, pus, or sign of inflammation in the general peritoneal cavity. The under surface of the left lobe of the liver was adherent to the wound of the stomach. On separation a small perforation was found at the extreme superior end of the scar, but separate from it. The stomach was free from the diaphragm and the lesser peritoneal sac was patent. The gall-bladder was adherent to the ascending colon by a minute purulent adhesion. The intestines and viscera were very pale. The ulcer of the stomach was at the junction of the lower and upper two-thirds, on the anterior surface midway between the two curvatures. The wound in the stomach was firmly closed. A small ulcer of the size of a shirt-button with a minute perforation at its base was to be seen near the lesser curvature to the cardiac side of the wound. On the posterior surface of the stomach opposite the wound was an erosion (or ulcer) of the size of a threepenny-piece, with a very thin base composed practically of peritoneum. The pylorus admitted the middle finger but not the thumb. There was no apparent dilatation of the stomach. In the second part of the duodenum was an ulcer of the size of a florin situated on the pancreatic surface, with soft slightly undermined edges, and a base composed of pancreatic tissue, in which was seen the eroded end of a vessel. This ulcer partook in the general pallor, but there was no feeling of induration in it, and it was apparently recent, there being

no thickening of peritoneum over it. The rest of the small intestine was apparently healthy. The appendix was at first sight healthy. In the meso-appendix was a white patch of old lymph to which the cæcum was adherent. By transmitted light there were five concretions in the appendix. The spleen was large and multiply notched. The kidneys and liver showed fatty infiltration. The gall-bladder was normal.

The gastric ulcer, duodenal ulcer, and appendix were sent to the Clinical Investigation Department, Cambridge, and the following reports were received:—

"1. *Gastric ulcer.*—The ulcer was bounded by a soft rolled margin, which was slightly undermined. The base was soft and was not apparently composed of cicatricial tissue. Near the centre of the base were a small perforation and a small elevated slough. Microscopical appearances: Ulceration for the most part does not extend through the muscular layer but the latter is extensively infiltrated with inflammatory cells and exudation. The subserous layer shows similar signs of inflammation and the mucous membrane contains several small cysts full of inflammatory exudation. The ulcer appears to be of an acute origin. There seems to be an excess of fibrous tissue in the submucous layer but I have been unable to find any evidence of chronic disease (R. D. Smedley).

2. *Duodenal ulcer.*—The ulcer is very similar in appearance to that of the gastric ulcer. The edges were thick, soft, and slightly undermined. In the central portion of the base of the ulcer were two small blood-vessels which had been exposed and opened as the result of the ulceration. Microscopic appearances: Ulceration has extended in places into the pancreas; in other parts the base is formed by the deeper layers of the muscular coat of the duodenum. At the edge of the ulcer the cells of the mucous membrane are swollen, degenerated, and stain badly. In the same region there are small collections of inflammatory cells. In other parts of the ulcer there is practically no evidence of inflammatory exudation, probably because the necrotic process was very rapid and possibly because the patient was in a very collapsed condition (R. D. Smedley).

3. *Appendix and mesentery.*—There is no evidence of inflammation either in the appendix or its mesentery. ..... In the transverse section will be seen a concretion which consists of cell débris and is probably fæcal in origin (R. D. Smedley).

The majority of the cells are lymphocytes but there are a few polymorphonuclear leucocytes in the mucous membrane which are probably due to irritation caused by the concretions. There is no sign of inflammation in the other coats of the appendix or its mesentery (Professor Woodhead)."

This last was in reply to some question as to cell exudation round the concretion.

Here, then, is a case of much interest. Chronic gastric ulcer is amenable in many cases to purely medical treatment, and in cases where medicine fails operative measures seem to hold out very excellent chances of complete recovery. Acute gastric ulcer, non-perforating, also is curable by purely medical treatment, but since this is in a great measure a trial of patience both for the physician and the patient, such cases are very apt to drift into chronic ulceration.

Perforating gastric ulcer, if early diagnosis be made and operative treatment undertaken, has a very fair prognosis. Operative treatment generally consists in stitching up the perforation or excising the ulcer *in toto*. Moynihan[1] has recently insisted on the association of gastric and duodenal ulceration and in view of the successful results of gastro-enterostomy for gastric and duodenal ulceration it would seem advisable in cases of perforating gastric ulcer to stitch up or to excise the ulcer and then to perform gastro-enterostomy. If the case has been seen sufficiently early to allow of a hopeful prognosis the patient's condition should not, generally speaking, be so bad as to prevent the prolongation of the operation by adding to it gastro-enterostomy. Such an addition has proved exceedingly valuable in cases of partial excision of the stomach and pylorus for carcinoma in the hands of Poncet and Delobe.[2] The appendix was examined in this case in view of a paper recently published by Dr. Lediard and myself,[3] but although clinically the tenderness of the appendical region suggested inflammatory reaction the microscopic examination showed no signs of inflammation.

I am greatly indebted to Dr. Lediard for helping me in the case and for permission to use notes of the case after removal to the infirmary.

Carlisle.

[1] THE LANCET, Feb. 11th, 1905, p. 340.
[2] Revue de Thérapeutique Médico-Chirurgicale, August 15th, 1905.
[3] THE LANCET, Sept. 10th, 1904, p. 761.

A CASE OF ECTOPIC GESTATION WHICH APPARENTLY RUPTURED TWICE.[1]

BY J. C. HOLDICH LEICESTER, M.D., B.S., B.Sc. LOND., F.R.C.S. ENG., M.R.C.P. LOND.,

CAPTAIN, I.M.S.; LATE RESIDENT SURGEON, THE EDEN HOSPITAL FOR WOMEN, CALCUTTA.

A HINDUSTANI Mahomedan woman, about 35 years of age, who had been married 16 years, attended the out-patient department of the Eden Hospital for Women, Calcutta, on Oct. 4th, 1904, for severe pain in the lower abdomen and irregular menstruation. The following history was afterwards obtained from the patient with much difficulty, as she was a dull and stupid woman. About the end of September she suddenly experienced a severe pain in her lower abdomen, chiefly on the left side, shooting down the left thigh, which came on without any apparent cause. She felt faint and was unable to move on account of the severity of the pain, which was cramp-like in character. She was treated outside hospital by a native midwife but received little, if any, benefit. Menstruation had always been irregular since the birth of her last child seven years previously and often came on a fortnight late, usually lasted about five days, and was quite painless. Her last period was about the beginning of July and she saw nothing in August or September. She stated, however, that she did not believe she was pregnant. (It was afterwards ascertained from her friends that she had thought herself pregnant and had taken some medicine which she obtained from a native midwife at the end of September with the idea of bringing on her periods again.) In August she suffered from vomiting, more especially in the early morning, but also sometimes after taking food. About this time she noticed pain and fulness of the breasts which continued up to the time of her admission into hospital. The bowels were very constipated; micturition was normal. There had been a whitish vaginal discharge since the pain began. She had suffered from what was apparently syphilis about three years previously and had had fever off and on for about seven years. Since the pain in the lower abdomen began the fever had been rather worse. Otherwise her general health had been good. She had had three children, the last seven years previously and one abortion at the fourth month eight years previously.

On examination of the abdomen beyond tenderness and slight distension over the lower part nothing abnormal could be detected. It was resonant on percussion. Vaginal examination revealed some prolapse of the anterior vaginal wall, the uterus lying slightly anteverted and anteflexed, freely moveable, and somewhat enlarged (to about the size of five or six weeks pregnancy). There was nothing whatever abnormal to be made out on either side of, or behind, the uterus. The bowels were much loaded. The heart and the lungs were normal. The general condition of the patient was bad, the pulse being rather weak and rapid and the respirations being hurried. She was at once admitted as an in-patient and carefully watched. The bowels were freely opened with aperients and enemata and the patient was put on a nourishing diet and a little stimulant was given. She steadily improved from this time and appeared to become quite well. The temperature had varied between 97° and 99·4° F. during her stay in hospital and there was a white discharge from the vagina but no trace of blood. She was discharged on Oct. 13th and on examination then nothing could be felt in the abdomen. Per vaginam the condition was found much the same as on admission. The uterus was of about the same size; there seemed to be slight increased resistance to palpation in the *right* fornix but nothing definite was felt. On the left side and in Douglas's pouch nothing whatever abnormal could be detected. A soft rubber ring pessary was inserted to relieve the prolapse of the vaginal wall.

[1] A paper communicated to the Obstetrical Society of London on Oct. 4th, 1905.

The patient was not seen again until the evening of Oct. 19th, when she again attended and the following further history was obtained: "She was quite well for two days after being discharged on Oct. 13th but on the third night, without any apparent exciting cause, she got severe pains in the lower abdomen on the left side and felt something give way. She became very faint, and stated that she actually fainted, and thought she was going to die. She could not bear to touch her abdomen nor to move in bed as the pain was so acute. She sent for a native midwife who told her she would soon get all right and gave her some country medicine to take internally and applied some remedy to the vagina. She got no relief from the treatment; the pain became worse and there was a feeling of heaviness in the vagina. There had been a slight discharge of white mucus stained with blood after the second attack of pain but no passage of a cast or anything of this nature. She also had great pain in passing urine."

On examination the abdomen was distended and very tender in its lower part. A tumour could be felt rising up out of the pelvis but its outline or relations could not be made out owing to the great tenderness. Per vaginam there was a fulness felt behind and on the left side but tenderness was so great that a satisfactory examination was impossible. Chloroform was therefore administered and a further examination was made. A smooth, rounded, regular tumour, dull on percussion, could now be distinctly made out, rising out of the pelvis rather more to the left than the right side, semi-cystic, and reaching about two inches above the pubes. There was no dulness in either flank. Per vaginam the uterus was lying forwards, being pushed to the front by a semi-cystic tumour lying behind and to the left of it, about the size of a large orange. The patient's general condition was rather bad but there were no signs of further hæmorrhage or other urgent symptoms, so it was decided to postpone operation until the following morning unless further complications supervened.

On Oct. 20th, under chloroform, the abdomen was opened by a three-inch incision in the median line, commencing about one inch below the umbilicus. On entering the peritoneal cavity the omentum was found to be extensively adherent in the pelvis; it was ligatured low down in nine sections, divided, and displaced upwards. On further exploration a collection of blood and blood clots was found on the left of the uterus, shut off from the general cavity by adhesions. The clots were rapidly cleared out with the hand and the pelvis was then flushed out with normal saline solution, all bleeding having seemingly stopped. The left Fallopian tube was found to be considerably distended at the uterine end; it was ligatured at this end and (after the infundibulo-pubic ligament had also been ligatured) removed, one or two small vessels in the cut broad ligament being afterwards separately tied. The ragged portions of the omentum adherent in the pelvis were easily detached and removed. The pelvis was carefully sponged out and then flushed again with normal saline solution. The right ovary, tube, and uterus were all found normal, except that the latter was a little enlarged. The left ovary could not be detected. The abdomen was closed with through-and-through silkworm-gut sutures, and a dressing was applied.

The patient stood the operation well, but as the pulse was a little weak one-fifteenth of a grain of strychnine was given hypodermically. The stitches were removed on the tenth day, union being good. She was discharged on Nov. 21st, just a month after operation with the abdominal scar soundly healed. Per vaginam the uterus was found to be normal in size lying a little anteverted. There was some slight induration behind and on the left.

About eight ounces of blood clot and blood were removed in all, some of which appeared to be of older origin than the rest as it was partially organised. The tube on examination was found to be dilated to about the size of a large walnut at its uterine end, the outer end being apparently normal. On section there were extensive interstitial hæmorrhage into its walls and an organised clot, in one part of which was found what seemed to be an amniotic cavity, about one-half by three-sixteenths of an inch; no trace of a fœtus could be detected either in the tube or in the blood clot removed, nor was there any trace of the left ovary in the parts removed.

I am indebted to Lieutenant-Colonel F. S. Peck, I.M.S. (for whom I was temporarily acting at the time), for his kind permission to publish the case; to Captain E. O. Thurston, I.M.S., resident surgeon of the Medical College Hospital, for his valuable help and assistance before and at the operation; and to the clinical clerk, Miss Flora Singh, for her careful notes.

A microscopical examination of the specimen was kindly made for me by Captain Leonard Rogers, I.M.S., the acting professor of pathology at the Medical College, Calcutta, who has furnished the following report: "Microscopic section of ectopic gestation. A longitudinal section through the Fallopian tube shows from without inwards the wall of the tube, which merges into a thick layer of decidual membrane, which at one end of the section shows large blood-containing sinuses of the placenta. On the inside in places chorionic villi are seen projecting into the deeper layers. No ovarian tissue was found in the section."

I saw the patient again on Jan. 16th of this year. The scar was quite sound; the uterus was lying in normal position except for slight deviation to the left; it appeared quite moveable and no thickening could be felt anywhere.

The case seemed to me worthy of record from several points of view, as it illustrates the very vague and indefinite symptoms and signs that may occur in the rupture of a tubal gestation, as I think the after-history of the case clearly points to the conclusion that this had occurred when the patient was seen on the first occasion. The total absence of all the signs made the diagnosis very difficult. The general symptoms of the case undoubtedly pointed to some abdominal trouble, but the aspect of the patient was not that of internal hæmorrhage but more like peritonitis, and the remarkable way in which she recovered made the diagnosis still more puzzling. It would seem that the hæmorrhage on this first occasion must have been very slight and quickly checked, and probably a mild peritonitis may have arisen which set up the adhesions found at the operation. The second rupture would probably have set up more severe hæmorrhage if those adhesions had not been present and so acted as a check to the bleeding. The decision to postpone the operation until the condition of the patient had improved seems to have been fully justified by the result. I am very doubtful whether the outcome would have been so satisfactory had she been operated on at once on the second admission. As to the question of the advisability of operating at all I scarcely think there could have been two opinions, and in this decision Captain Thurston entirely concurred with me.

Gower-street, W.C.

AN EPIDEMIC OF DYSENTERIC DIARRHŒA.

BY THOMAS ORR, M.B., CH.B. GLASG.

WHILE acting as locum-tenent at a coast town on the Clyde during March last I had the opportunity of investigating an epidemic of dysenteric diarrhœa which was interesting clinically as well as from a public health point of view. The interesting features of the outbreak were: (1) its occurrence in spring during very cold weather with biting east winds and sleet; (2) its attacking all ages (from 10 months to 82 years) and all classes alike; and (3) the fact of the cause having been milk-borne, except in two cases which resulted from direct contact with a patient suffering from the disease.

Symptoms.—In most of the cases the onset appeared to be quite sudden, beginning with a feeling of chilliness and nausea, followed by diarrhœa a few hours afterwards. Vomiting was present in three cases only and consisted of simple emptying of the stomach contents, no bile being present. Cases 13 and 14 complained of chilliness at night and on the following morning diarrhœa came on. Fever was present in most cases, varying from 100° to 104° F. The fever was highest on the first day and then gradually fell to normal. The pulse was full and quick and varied with the temperature mostly. The tongue was thickly coated with white moist fur, with clean tip and edges. Flushing of the face was present in most cases, with pallor round the mouth. Slight headache was complained of in a few. The diarrhœa was of a dysenteric type, varying in degree, the stools consisting of bloody mucus, often of pure blood, and in one case two large black sloughs were passed. The number of stools passed in the day

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1	F.	13 years.	Driving in a cold wind.	March 8th.	Temperature 100° F.; pulse 92; ten motions.	Temperature 103·6°; much blood present.	Temperature 100°; less blood.	No further observation.		—	—	—	—
2	M.	2 ,,	Irregularity of bowels.	,, 7th.	Temperature 100° F.; still some blood.	Blood absent.	Stools normal.	—	—	—	—	—	—
3	M.	4 ,,	,,	,, 7th.	Feverish on the 10th. Blood now absent.	—	Well.	—	—	—	—	—	—
4	F.	32 ,,	Chronic dyspepsia.	,, 8th.	Slight amount of blood.	Motions still loose.	Blood now absent.	—	Well.	—	—	—	—
5	M.	45 ,,	,,	,, 8th.	Bloody stools; feverish.	Still diarrhœa.	Diarrhœa.	—	—	—	Stools normal; no blood.	—	—
6	F.	12 ,,	Recovering from pneumonia.	,, 8th.	Diarrhœa for only two days.	Well.	—	—	—	—	—	—	—
7*	F.	22 ,,	(?)	,, 9th.	Diarrhœa and feverish.	Diarrhœa.	—	—	—	Well.	—	—	—
8	M.	4 ,,	Bronchitis.	,, 9th.	Temperature 101° F.; pulse 100; 20 motions during the night; vomiting.	Severe pains; 20 motions during the day.	Mucus, blood, and sloughs.	Much blood. *Specimen taken.*	Little blood.	No blood.	Motions feculent.	*Blood taken.*	—
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10	F.	14 ,,	Cycling in a cold wind.	,, 10th.	—	—	Temperature 102°F.; pulse 120; diarrhœa; sickness.	Temperature 100°; pulse 92, blood in stools. *Specimen.*	Temperature 98°; pulse 80; still some blood.	—	Well. *Blood taken.*	—	—
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13†	F.	50 years.	Run down in health.	March 16th.	Vomiting.	Temperature 100·2° F.; pulse 100; bloody mucus.	Temperature 99·6°; pulse 88; much blood. About 40 motions in 24 hours.	Less blood. *Specimen.*	—	No blood present.	Well. *Blood taken.*	—	—
14†	M.	55 ,,	Rhinitis for some days.	,, 20th.	—	—	—	—	Temperature 100° F.; bloody stools.	Blood still present. *Specimen.*	—	Blood now absent.	*Blood taken.*

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ranged from eight to 40, only a few drachms of discharge being passed at a time. Each passage was accompanied by great pain and tenesmus and was followed by great pain at the anus and lower part of the abdomen of which the patients complained most. There was tenderness along the cæcum, colon, and sigmoid flexure, thus showing the disease to be of the nature of an ileo-colitis. The whole duration of the attack from the time of onset until the motions became fæculent and blood had disappeared was typically about eight days, but in three cases the attacks were abortive. These three abortive cases, Nos. 2, 3, and 6, are seen in the accompanying table. All the patients recovered, although convalescence in a few was somewhat protracted, the attack having left them weak and anæmic.

Cause.—In most cases there was found to be a predisposing cause; for example, as noted in the table, Case 5 suffered from chronic dyspepsia and was much run down in health, Case 6 was only some weeks recovered from pneumonia, and Case 12, a woman, aged 82 years, was an invalid from chronic bronchitis and a weak heart. The water-supply of the district was above suspicion and the fact that the cases constituted only a small proportion of the total population of the district eliminated the water as the causal factor and indicated some other vehicle of infection common to the individuals affected and of a more limited distribution than the water. On inquiry it was found that out of the total of 14 cases 12 were supplied with milk by the same dairyman, thus throwing suspicion on the milk-supply. The two remaining cases, Nos. 13 and 14, partook of little milk and this was obtained from another dairyman. The [illegible] were located along the route taken by the first-mentioned [illegible]'s cart in the course of the delivery of the milk, [illegible]ecially localised at the beginning and end of the [illegible]rsed, six cases being grouped together at the [illegible] at the opposite end, and two cases being [illegible] wide intervals. No other cases of diarrhœa [illegible] present in the district at the time of the [illegible] have occurred since. The reasen why so [illegible] of the total population of the district was [illegible]ably due, judging from the facts elicited [illegible]rations, to the absence of a sufficient pre- [illegible] those not attacked, and further to the fact [illegible] portion of those families which escaped [illegible]eir milk before use, no cases occurring [illegible]was so treated.

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To ascertain the essential cause of the outbreak the stools from several of the patients and a sample of the water from the trough were examined bacteriologically. I should, in the first place, state that in the bacteriological examination I was greatly handicapped owing to my being some 30 miles from Glasgow in the country and with no apparatus beyond a few agar tubes, slides, and some sterile pipettes. Most of the work was done a fortnight after the time of occurrence of the epidemic. Films made from the stool fluid showed a great number of organisms, the field of the microscope being crowded by short bacilli with here and there chains of streptococci. On two agar tubes successive strokes were made by the platinum wire with the fluid from Cases 8 and 10 respectively. At the end of 48 hours there were seen many small semi-opaque and rounded colonies of short bacilli, a few transparent and much smaller colonies of streptococci, and one or two fluorescent colonies which proved to be of bacillus fluorescens liquefaciens.

Having suspected that the disease might have been caused by one or other of the dysentery bacilli, six glucose agar tubes were inoculated from different semi-opaque colonies from each culture tube but these after incubation for 24 hours at 37° C. showed abundant gas production and acidity, thus proving that the dysentery bacilli were not the cause since these organisms do not ferment glucose. Agar plates were also made from other two specimens of the alvine discharges from Cases 12 and 13 which had been kept for two weeks in sealed sterile pipettes. These plates after incubation at 37° C. showed the same organisms, even the streptococci being present. Films prepared from the original stools at the same time as the preparation of the plates showed a slight reduction in the number of the organisms after keeping in the pipettes. The different colonies in the plates were treated in the same way by inoculating glucose agar tubes, but here again after incubation fermentation occurred.

To ascertain whether this organism was really the cause of the epidemic agglutination tests were performed with blood taken from Cases 8 and 10. It was found that eight subcultures, two from each stool fluid, were agglutinated in from eight to 20 minutes by the blood in a dilution of 1 in 40. The blood from the other patients also produced a like result. A stock culture of bacillus coli was also agglutinated by the blood serum in the same dilution within eight minutes

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These tests having shown this organism to be the apparent cause of the epidemic other tests were applied to identify it:—

Motility	Marked in all cultures.
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The reactions of the bacillus in the various sugar media were also determined with four separate cultures which were used in the agglutination tests:—

—	Glucose broth.	Maltose broth.	Lactose broth.	Saccharose broth.	Mannite broth.	Dextrine broth.
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All these tests showed that the organism found was bacillus coli and from the abundance in the stools and the agglutination tests it may be concluded that the bacillus coli was the cause of the epidemic. The milk was not examined; in the first place because the cases ceased to occur when attention was drawn to the milk and, in the second place, there were no facilities for examining the milk at the time. A specimen of the trough water was examined a week after the outbreak, but no organism similar to that in the stools nor one which could be agglutinated by the blood of the patients was found. This was probably due to the fact that the farmer had thoroughly cleansed the trough on being informed of the outbreak.

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* This patient was servant to the patient in Case 5. † These two cases were probably due to direct contact with Case 8.

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The milk being suspected the farm was next examined. No persons were ill on the farm and no disease was found in the cattle. One part of the management of the farm, however, was found to be defective, and that was in the method of manipulation of the milk-cans. These were carried through the byre from the place in which they were kept to a part of the buildings fitted with two boilers and a trough. The trough was used as a source of water-supply for the boilers and also occasionally for watering the cattle. At the time of my examination it was in a filthy condition. The boilers were filled from this source and the boiled water was then used to "scald" the milk cans. This trough was suspected as the source of the outbreak, since it was quite possible for the cans to be polluted with the dirty unboiled water. The onset of the outbreak was spread over only four days, as may be seen from the table, and in this connexion it is noteworthy that the trough was cleaned out in the afternoon of the fourth day. Cases 13 and 14 can only be explained as being the result of direct infection from Case 8, whom Case 13 nursed and whom Case 14 also handled. Case 14 may, however, have been infected from his wife (Case 13).

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This outbreak of dysenteric diarrhœa is of great interest as

showing that, given certain sufficient predisposing causes on the part of certain individuals, a virulent strain of bacillus coli introduced into the alimentary canal, especially after some cultivation in the domestic milk-supply, may cause an extensive epidemic affecting seriously the health of a district.

I am much indebted to Professor J. Glaister for his kindness in allowing me to carry out the investigations in the University of Glasgow Public Health laboratory.

Hamilton, N.B.

A READY METHOD OF DIFFERENTIATING STREPTOCOCCI AND SOME RESULTS ALREADY OBTAINED BY ITS APPLICATION.

BY M. H. GORDON, M.A., M.D., B.SC. OXON.

(From the Research Laboratory, St. Bartholomew's Hospital, E.C.)

ALTHOUGH few bacteria have been more debated in the past than streptococci, the fundamental question whether all streptococci are varieties of one, or whether different species exist, is a matter upon which the majority of bacteriologists do not appear yet to have come to a definite conclusion, and for the reason that absolutely convincing evidence upon which to decide that issue has hitherto been lacking. This uncertainty with regard to the relationship of streptococci to one another is in marked contrast to the pathogenic importance of the group. Apart from cases of erysipelas and sepsis—puerperal or other—it is well known that in the complications and fatal issue of a large number of acute and chronic diseases streptococci play an exceedingly important etiological part. Exactly how important that part is will not be adequately understood until bacteriological examination becomes more a feature of clinical practice than it is at the present time. The fortuitous element that now attends the employment of antistreptococcic sera, even in cases where streptococci have been definitely ascertained to be at work, is certainly not in favour of the unity of streptococci. It is a necessary outcome, however, of ignorance as to the diversity that obtains amongst them.

The characters of streptococci that have been most studied hitherto[1] have been their morphology (both macroscopic and microscopic); their growth upon gelatin, agar, potato, and in litmus milk; their virulence for mice and rabbits; and more recently their agglutinative and hæmolytic properties. Marmorek also introduced a test which consists of examining the capacity of a streptococcus of growing in the filtrate of a fluid in which another streptococcus has previously been cultivated. As already mentioned, however, the evidence obtained by comparing streptococci in respect of these points has not been of so convincing a nature as to cause the majority of bacteriologists to abandon their position of reserve, and the question naturally arises—Are these properties of streptococci that have been so exclusively studied hitherto, and with such unconvincing result, the best properties by which cocci of this class may be differentiated?

In the following paper I shall bring forward evidence to show that, over and above the characters in question, there are other inherent qualities of streptococci, qualities by means of which distinct types of streptococci may readily be discerned and identified. The differential characters referred to were discovered and applied in course of an investigation which I have had the honour to carry out during the past few years on behalf of the Local Government Board and, as full details of the various stages and results of that inquiry are contained in the reports of the medical officer for 1902-03 and 1903-04 respectively, I shall here only refer to the chief results that have been obtained up to the present time by an examination of the streptococcus group with these differential tests.

1. THE FIRST MATTER TO BE DETERMINED WAS THE NATURE OF THE CULTURAL CHARACTERS IN REGARD TO WHICH STREPTOCOCCI EXHIBIT THE SHARPEST DIFFERENCES INTER SE.

The laboratory procedure by which it was attempted to obtain an answer to this question was as follows: 12 streptococci, representative of the group as found not merely in man but in nature, were selected for comparison. The sources from which these streptococci had been obtained were saliva, fæces, pus, blood of a case of septicæmia, milk, oyster, dust, and air. Ten of these trial streptococci rendered broth uniformly turbid and therefore belonged to the morphological class of streptococcus brevis. All 12 of the streptococci retained Gram's stain and all save one failed to liquefy gelatin.

Litmus milk was the first medium in which the 12 streptococci were tested. Secondly, they were compared in regard to their ability to produce a change of colour in broth tinted with various dyes, and especially in regard to their ability to produce green fluorescence in neutral red broth, a test I had previously shown to be applicable for the purpose of distinguishing streptococcus brevis, the most abundant and constant micro-organism in normal human saliva, from streptococcus pyogenes.[2] Thirdly, the 12 streptococci were compared in regard to their ability to decompose with an acid reaction some 30 different chemical compounds belonging to the carbohydrate, glucoside, and polyatomic alcohol series respectively.

As a result of this investigation a number of tests were found available for differentiating streptococci and of these differential tests the following nine were selected for routine employment.[3] 1. The question as to the clotting of litmus milk in three days at 37° C. 2. The reduction of neutral red broth during incubation anaerobically for two days at 37° C. 3. The production of an acid reaction in three days aerobically at 37° C. when cultivated in slightly alkaline broth containing 1 per cent. of saccharose. 4. Ditto, but lactose. 5. Ditto, but raffinose. 6. Ditto, but inulin. 7. Ditto, but salicin. 8. Ditto, but coniferin. 9. Ditto, but mannite.

Extra tests.—Streptococci that decompose mannite with an acid reaction may with advantage be also tested in the same way against sorbit, glycerine, and isodulcit or rhamnose.

The broth used in these decomposition tests was ordinary beef broth freed from sugar by cultivating bacillus coli therein for three days at 37° C. and then sterilised, filtered, rendered slightly alkaline, and tinted with litmus. Dr. A. C. Houston, however, has recently devised a more convenient and cheaper medium which I now use. This medium consists of distilled water containing lemco, 1 per cent.; peptone, 1 per cent.; sodium bicarbonate, 0·1 per cent.; and ten cubic centimetres per cent. of a 10 per cent. watery solution of ordinary solid litmus. Control tests made by growing streptococci in these media alone invariably gave negative results *qua* change of colour of the litmus in the direction of acid. In the differential tests the proportion in which the carbohydrate, glucoside, or polyatomic alcohol was added was 1 per cent.

I have not so far attempted to investigate the chemical details of the process by which streptococci manufacture acid from these substances but it is more than probable that the action is one of hydrolysis. The acids formed are probably lactic and acetic and from the suggestive work of Ainley Walker and Ryffel[4] it is possible that formic acid is also produced. The discovery of Walker and Ryffel[5] that traces of formic acid are actually obtainable from the *bodies of streptococci themselves* is one of much clinical interest.

Having obtained in the fashion described therefore a series of definite tests for differentiating streptococci by their biochemical properties, the next step was to apply the tests to a large number of these micro-organisms. Up to the present between 800 and 900 streptococci have been examined with results that will now be briefly considered.

2. STREPTOCOCCI FROM THE HUMAN BODY IN HEALTH.

(*a*) *Saliva.*—In course of a quantitative bacteriological analysis of samples of saliva from various normal persons—an investigation made previously to the acquirement of the differential tests—I had found that streptococci were by far the most abundant micro-organisms in normal saliva and I showed that by the culture test in broth and streptococcus brevis as index the presence of so minute a particle as 0·000,000,1 cubic centimetre of human saliva could be detected. Later I examined a series of infants' mouths soon after birth and showed that, although streptococcus brevis is absent at birth, the oral cavity becomes infected with this micro-organism within 24 hours of birth.

[1] A useful summary of the evidence for and against the unity of streptococci is contained in an article by Beneditka in the Bulletin de l'Institut Pasteur, vol. ii., 1904, Nos. 16 and 17.

[2] Gordon: Centralblatt für Bakteriologie, Originale, 1903, Band xxxv., No. 2.

[3] Ibid., 1904, Band xxxvii., No. 5.

[4] Walker and Ryffel: Brit. Med. Jour., Sept. 10th, 1903.

[5] Loc. cit.

Saliva, therefore, is a secretion that affords ample opportunity for the study of streptococci. Accordingly, samples of saliva were obtained from 22 different normal individuals and in each case about a dozen specimens of the streptococci present to over 100,000 per cubic centimetre of the saliva were isolated and tested. Altogether 300 streptococci of normal saliva were in this way subjected to the nine differential tests. As a result it was found that all these 300 streptococci of normal saliva had two characters in common—they all produced an acid reaction in broth containing saccharose and they all quite failed to produce such change in broth containing mannite. The negative reaction to mannite of all these 300 streptococci of normal saliva is especially important, as will be seen later.

Although the 300 salivary streptococci behaved alike in two of the nine differential tests, they differed so much in the remaining seven tests that they were split up by them into no less than 48 different types. The vast majority of these types, however, were rare. Thus:—

10	types occurred	in only	1 sample.
12	,,	,,	2 samples.
10	,,	,,	3 ,,
3	,,	,,	4 ,,
3	,,	,,	5 ,,
2	,,	,,	6 ,,
1	,,	,,	7 ,,
2	,,	,,	8 ,,
1	,,	,,	9 ,,
1	,,	,,	15 ,,
1	,,	,,	17 ,,
1	,,	,,	18 ,,

The characters of the five streptococci most abundant in normal human saliva (22 samples) are seen in Table I.

TABLE I.

Frequency.	Clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.	Specimens.	Sources.
1 *a*	+	+	+	+	+	–	–	–	–	43	17
1 *b*	+	+	+	+	–	–	–	–	–	41	18
3	+	–	+	+	–	–	–	–	–	24	15
4 *a*	–	–	+	+	–	–	–	–	–	16	9
4 *b*	+	+	+	+	+	–	+	–	–	15	9

I believe that the first two of the above streptococci, and possibly the third and fourth also, are practically always present in normal human saliva. As regards virulence, it may be said that a large number of streptococci isolated from normal human saliva were tested upon mice but the result was uniformly found to be negative.

(*b*) *Fæces.*—Some years ago Dr. Houston pointed out that streptococci, by reason of their constancy and relative abundance in sewage, form a means whereby sewage pollution can be detected. Recently, with special view to determining the question whether any particular type or types of streptococci were more valuable than others as an index of fæcal pollution, he isolated a total of 300 streptococci from 20 normal stools and submitted each of these streptococci to eight of the nine differential tests, the test omitted by him being that in coniferin. Each streptococcus examined was present to at least 100,000 per gramme of fæces; in the majority of the stools streptococci were found to exceed 1,000,000 per gramme and in some they exceeded 10,000,000 per gramme. The result of this investigation is fully reported by Dr. Houston in the report of the medical officer of the Local Government Board for 1903–04, pp. 487–514.

By the eight tests the 300 fæcal streptococci were found by Dr. Houston to be differentiated into 40 different types. But as in the case of the salivary streptococci most of the types were comparatively rare. Thus:—

15	types occurred	in only	1 sample.
10	,,	,,	2 samples.
4	,,	,,	3 ,,
2	,,	,,	4 ,,
3	,,	,,	5 ,,
1	,,	,,	6 ,,
3	,,	,,	7 ,,
1	,,	,,	8 ,,
1	,,	,,	9 ,,

The characters of the five streptococci most abundant in normal human fæces (20 samples) are seen in Table II. which I have compiled from Dr. Houston's results.

TABLE II.

Frequency.	Clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Mannite.	Specimens.	Sources.
1	+	+	+	+	–	–	+	–	13	9
2	+	–	+	+	–	–	+	–	22	8
3 *a*	+	+	+	+	–	–	+	+	39	7
3 *b*	+	+	+	+	+	–	+	–	11	7
3 *c*	–	–	+	–	–	–	+	–	10	7

It is noteworthy that all the five streptococci found most frequently in fæces should have given a positive reaction in salicin, and it is to be regretted that the test in coniferin was omitted, for I have found that streptococci that give a positive reaction in salicin can be further subdivided according as they give a positive or negative reaction in coniferin. The streptococcus first in frequency in fæces is seen to be identical in all respects, save as regards salicin, with one of the two streptococci equal first in frequency in saliva. It will be observed also that the streptococcus second in frequency in fæces is identical with the streptococcus third in frequency in saliva in all respects, save as regards salicin. Although the next streptococcus (3 *a*) was only equal third in frequency in fæces as judged from the sample standpoint, more actual specimens of it were obtained by Dr. Houston than of any other. The streptococcus in question gave six positive reactions and what is especially noteworthy about it is that it produced a positive reaction in mannite. One of the streptococci (3 *b*) equal third in frequency in fæces is identical with a streptococcus (4 *b*) equal fourth in frequency in saliva. The last of the five fæcal streptococci (3 *c*) gave a positive reaction in only two of the tests—viz., in saccharose and salicin. Dr. Houston examined the virulence for mice of a large number of streptococci from normal fæces but he always found it to be negative.

3. Application of these Results for the Purpose of Detecting the Presence of Particles of Saliva or of Fæcal Matter respectively.

Since streptococci are particularly abundant in saliva and fæces of normal persons, and since in each of these two secretions respectively certain distinct types of streptococci occur far more frequently than others, the presence of these particular types of streptococci may be used as a test whereby the presence of particles of material of either kind may be detected.

It is hardly necessary to observe that from the point of view of preventive medicine the importance of being able to identify the presence of particulate material derived from the mouth or intestine is great. For where environment is such that particulate pollution derived from the human mouth or intestine has continual access to the alimentary or respiratory system of others, it is only a matter of time and opportunity for infection to be successfully transmitted by the same route. Tests, therefore, by which particulate material derived from mouth or intestine can be identified, and the frequency and extent of such pollution measured are tests by which the danger of the access of morbific virus may be discerned and the efficiency of measures adopted with a view to preventing such access gauged.

The two chief vehicles by which infection is liable to be transferred are air and food, especially drinking water. In the case of air, the particulate pollution which appears to be most fertile from the point of view of infection is material derived from the mouth; in the case of water, on the other hand, the form of particulate pollution by which the transfer of disease is most often effected is that emanating from the bowel. The well-known circumstances of a number of epidemics of typhoid fever and cholera are witness to the reality of water-borne disease, and the high infectivity of processes such as influenza and diphtheria illustrates the facility with which zymotic disease affecting the respiratory passages may spread through air. As regards the comparative importance of air and water respectively as vehicles of infection, there can be little doubt that, so far as can at present be seen, far more disease is conveyed by air

than by water, and this, perhaps, is hardly to be wondered at when it is realised, amongst other things, that a man consumes in a day roughly 5000 times as much air as water.

The chief experience which I have had up to the present in applying these streptococcic tests for the purpose of detecting salivary or fæcal pollution respectively has been in applying them to air. The result of that experience is briefly as follows. As regards salivary pollution I may say that, at one time or another, I have obtained examples of all the five streptococci most characteristic of saliva from the air of inhabited rooms. The streptococcus which I have found to occur most frequently in circumstances when air is subject to particulate pollution derived from the human mouth is the streptococcus first in the list of the streptococci recovered most frequently from saliva. As regards fæcal pollution, I may say that I have obtained the first of Dr. Houston's fæcal streptococci, together with bacillus coli, in a broth-plate exposed to air contaminated by particulate material derived from persons' boots. The fæcal pollution, in this instance, was undoubtedly horse manure brought by boots from the streets. I have also obtained the third of Dr. Houston's streptococci—viz., 3*a*, producing a positive reaction in mannite, from air polluted by the same agency. The last of Dr. Houston's streptococci—viz., 3*c*, producing a positive reaction in saccharose and salicin only, is common in street dust and air; it is, in fact, a variety of the streptococcus which, from its frequent occurrence in the air of London, I have termed the "air streptococcus." Other varieties of the streptococcus produce positive reactions in saccharose, salicin, and coniferin; or in the last two alone.

The most active streptococci, in the chemical sense, which I have yet found, were isolated from fæcal matter or from dirt brought from the streets by persons' boots. In the latter case the streptococci were probably derived from horse manure. The chief reactions given by three of these streptococci are seen in Table III.

TABLE III.

No.	Clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.	Glycerine.	Rhamnose.	Liquefaction of gelatin.	Source.
1	+	+	+	+	–	–	+	+	+	–	–	–	Dust of boots.
2	+	+	+	+	–	–	+	+	+	+	–	–	Typhoid stool.
3	+	+	+	+	–	–	+	+	+	+	+	+	Dust of boots and also of rooms.

TABLE IV.—*Streptococci from Various Septic Processes.*

Source.	Specimens.	Clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.	Virulence.
(*a*) Blood, case of pleurisy. (*b*) Blood, "burns and septicæmia." (*c*) Blood, cellulitis. (*d*) Pleural effusion.	4	–	–	+	+	–	–	–	–	–	Three tested and all found pathogenic for mouse.
(*a*) Pus, abscess. (*b*) Wound and blood, septicæmia. (*c*) Wound and throat, surgical scarlet fever (?). (*d*) Pus, otorrhœa, scarlet fever.	4	–	–	+	+	–	–	+	–	–	Three tested and all found pathogenic for mouse.
(*a*) Pleural effusion. (*b*) Tonsil and cervical gland, scarlet fever.	2	–	–	+	+	–	–	+	–	+	Both pathogenic for mouse.
Blood, case of erysipelas.	1	–	–	+	+	–	–	–	–	+	Pathogenic for mouse.
Pus, abscess.	1	–	–	–	+	–	–	–	–	+	Not tested.
Pus, empyema.	1	+	–	+	+	–	–	+	+	–	Mouse unaffected

4. STREPTOCOCCI FROM THE HUMAN BODY IN DISEASE.

Altogether some 20 streptococci of this category have been examined by me in the nine tests. For most of these streptococci I am indebted to Dr. F. W. Andrewes or to Dr. T. J. Horder. The characters of the streptococci obtained from various septic processes are seen in Table IV.

It is seen from these results that the streptococcus which has been found up to the present to be most frequently engaged in septic cases either gives positive reactions to saccharose and lactose only or gives these two reactions with the addition of a positive reaction in salicin. The former type of streptococcus, but in a non-virulent stage as regards the mouse, is the fourth most frequent streptococcus in normal human saliva. Another type of pathogenic streptococcus met with gives a positive reaction in mannite. These and the other results recorded in the table indicate that there is considerable diversity amongst streptococci occurring in cases of sepsis. It is highly desirable that the degree of this diversity should be further determined.

Ulcerative endocarditis.—The characters of streptococci isolated from five cases of this disease are seen in Table V.:—

TABLE V.

Source.	Specimens.	Clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.	Virulence.
Recovered from the blood of a patient during life by Dr. Horder.	1	+	+	+	+	+	–	–	–	–	Mouse died in 48 hours.
Ditto; another case.	1	+	+	+	+	–	–	–	–	–	Not tested.
Recovered from the heart valve post mortem in two cases by Dr. Andrewes.	2	+	+	+	+	+	–	+	+	–	Mouse unaffected
Ditto; another case.	1	+	–	+	+	+	–	+	+	–	Mouse unaffected

From their behaviour to the differential tests it is seen that these streptococci of ulcerative endocarditis are different from the pathogenic streptococci previously examined. In view of the well-known theory of Hunter and others respecting the etiology of this affection, it is a matter of considerable interest to observe that the first two of these streptococci of malignant endocarditis are identified by the tests with streptococci found to occur more frequently and extensively than any other micro-organism in normal human saliva.

5. PATHOGENIC STREPTOCOCCI RECOVERED FROM SOURCES OUTSIDE THE HUMAN BODY.

Two streptococci of this category have been met with and submitted to the tests. Their characters are seen in Table VI.

TABLE VI.

Source.	Clot.	Neutral red.	Saccharose.	Lactose.	Raffinose.	Inulin.	Salicin.	Coniferin.	Mannite.	Virulence.
1. Recovered in pure culture from the heart's blood of a mouse fed on milk suspected of causing throat illness at Woking.	–	–	+	+	–	–	+	–	–	Mouse died in 48 hours.
2. Recovered in pure culture from the heart's blood of a mouse dead three days after injection with the dust of an inhabited room.	+	–	+	+	–	–	+	–	–	Mouse died in 48 hours.

The first of these two streptococci was isolated from a sample of purulent milk that had been associated with the production of an epidemic of "throat illness" amongst consumers. Dr. R. W. C. Pierce of Guildford kindly provided me with this material. The reactions of the streptococcus are seen to be identical with those of one of the commonest streptococci of sepsis. The second virulent streptococcus was obtained from dust on the floor of an inhabited room. In its response to the differential tests this streptococcus is identical with a streptococcus second in frequency in normal fæces. Dr. Houston, however, it will be remembered, did not succeed in getting a virulent specimen of this or of any other streptococcus from that source.

6. THE STABILITY OF THESE REACTIONS OF STREPTOCOCCI.

On several occasions I have re-examined a streptococcus in the differential tests after it had been in culture for periods up to a fortnight, and up to the present time I have always found that such streptococci respond to the tests in exactly the same manner as when first isolated. In order to put the matter of the stability of reactions to a more severe test I passed 11 streptococci through mice and examined their reactions again on recovery from the animal tissues. Full particulars of these experiments are seen in the report of the medical officer for 1903–04, pp. 417–19. Nine of the 11 streptococci were found to respond to the tests in exactly the same manner as prior to passage through the mouse. Two other streptococci, however, became modified; one streptococcus which previously had given a positive response to saccharose and lactose only was found on recovery from the mouse to give an additional positive reaction in salicin; the other streptococcus lost its power, which was but feeble in the first instance, of producing green fluorescence in neutral red broth. The only two of the nine reactions therefore that there is at present the slightest reason for doubting the stability of are those in salicin and neutral red.

PROVISIONAL CONCLUSIONS.

The differential tests which I have recommended in previous reports and applied during recent years to the careful study of the "strepto-biology" of milk, saliva, water, excremental matters, and morbid and other materials afford, in my opinion, a definite basis (hitherto lacking) upon which to classify streptococci. I am not without hope that the foregoing tests for differentiating streptococci may also serve a useful purpose in connexion with serum therapeutics. At present the choice of an anti-streptococcic serum to combat a particular case of streptococcus infection is apt to be speculative in character. This speculative attitude is founded largely on the erroneous impression that streptococci still remain incapable of differentiation. Briefly, the doctrine of the unity of streptococci has arisen chiefly from inability by use of the *older laboratory tests* to discriminate between specimens of streptococci which in point of fact differed conspicuously in origin and perchance also in morphology and in their behaviour subsequently in animal inoculation experiments. So it came to pass that the view gradually gained currency that because one or another time-worn laboratory test failed to distinguish streptococci believed on sound grounds (clinical or other) to be totally different in character, the belief of dissimilarity must needs be abandoned. The chief object of my paper is to show that the individuality of streptococci is real, not apparent; and that by the use of the tests I have suggested their preliminary classification is already possible and practicable.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF CONGENITAL UMBILICAL HERNIA CONTAINING MECKEL'S DIVERTICULUM.

BY A. J. LANDMAN, M.B., CH.B. VICT.,
HOUSE SURGEON TO THE MANCHESTER VICTORIA MEMORIAL JEWISH HOSPITAL.

THE following case seems to be worthy of record on account of the great rarity of the condition.

A female infant, aged one day, was brought to the Manchester Victoria Memorial Jewish Hospital with a swelling at the umbilicus which had been present at birth. The swelling was of about the size of a Tangerine orange and the coverings consisted of the constituents of the umbilical cord spread over it. The cord had been cut and tied beyond the swelling. The umbilical opening was widened out, being about an inch in diameter. On palpation gurgling could be heard within the sac but the contents could not be reduced into the abdomen. Congenital umbilical hernia or exomphalos was diagnosed and laparotomy was performed by Dr. Samuel English, honorary medical officer to the hospital, soon after admission. Chloroform was given, a circular incision was made round the sac, and the sac wall was separated all round from the underlying intestine, to which it was very adherent. The contents of the sac were small intestine, one part of which consisted of a blind diverticulum and this was the part adherent to the sac wall. Into this diverticulum one of the umbilical vessels entered and there was free hæmorrhage on separating the adhesions. The vessel was ligatured. The contents of the sac were replaced into the abdominal cavity and the sac wall was removed. The wound was then closed by a row of catgut sutures for the peritoneum and silkworm-gut for the abdominal wall. The child recovered well from the shock but on the second day her temperature rose to 104° F. and reached 105° on the third day. She vomited bile-stained material and the abdomen was distended and rigid. Death occurred on the third day.

On post-mortem examination the peritoneum was found to contain some sero-purulent fluid and there were signs of a localised peritonitis which had commenced in the neighbourhood of the diverticulum. On examining the intestine the diverticulum was found to be situated about two and a half feet from the ileo-cæcal junction. It was about two inches long and double the width of the small intestine. The specimen was removed and preserved. The spleen was enlarged and the bladder was distended but all the other organs were normal.

The condition found in this case is an interesting anomaly of development. Intra-uterine adhesions had occurred between Meckel's diverticulum (which represents the remains of the vitello-intestinal duct of the embryo) and the coverings of the umbilical cord and prevented its retraction into the abdomen. I am indebted to Dr. English for permission to publish this case.

Manchester.

A CASE OF NASAL OBSTRUCTION FROM AN UNUSUAL CAUSE.

BY JAMES WALKER DOWNIE, M.B. GLASG.,
LECTURER ON DISEASES OF THE NOSE AND THROAT AT THE UNIVERSITY OF GLASGOW.

A MAN who was recently referred to me on account of an extensive intranasal ulcerative lesion associated with considerable deformity of the nose also complained of nasal blockage. The cause of the latter proved to be so unusual that I venture to have it noted in THE LANCET as a matter

of possible interest to others. The septal cartilage and the perpendicular plate of the ethmoid bone were absent, so that the anterior half of the nose was transformed into one large cavity, but notwithstanding this the patient had some difficulty in breathing through the nose. On examining the buccal cavity I found the fauces to consist of a single arch extending from the anterior pillar on one side to the same structure on the other. The free border of the soft palate was smooth, the line of the arch was regular, there was no vestige of a uvula, and there were no scars. On exploring the post-nasal space with the rhinoscopic mirror, however, the uvula was brought into view. The free border of the soft palate and the uvula were curved upwards and the uvula, considerably larger than the average in size, lay against the posterior nares with the tip directed upwards. The posterior nares themselves were contracted as a result of cicatrisation following on extensive ulceration, and the same ulcerative process had apparently affected the greater part of the upper surface of the soft palate. As a result an extensive cicatrix had formed and this had dragged the uvula upwards and forwards until it lay in contact with, though not adherent to, the posterior border of the vomer, in which position it formed a serious obstacle to nasal respiration.

Glasgow.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

WESTMINSTER HOSPITAL.

A CASE OF ANKYLOSTOMIASIS.

(Under the care of Dr. ALFRED M. GOSSAGE.)

A MAN, aged 31 years, a soldier, was admitted to the Westminster Hospital under the care of Dr. A. M. Gossage on August 1st, 1905. He had served for 11 years in India and while out there had had several attacks of ague. Early in 1902 he had an attack of acute dysentery of a severe type lasting a couple of months and ending in recovery. In August, 1903, he had another attack of dysentery which "kept on." He was invalided home and landed in England in April, 1904. As he still suffered from diarrhœa and weakness he was kept as an in-patient in an army hospital from June to August, 1904. He improved considerably but still passed several fluid and slimy motions a day though these no longer contained blood. For the next five months his health varied, sometimes better, sometimes worse, but he always had some diarrhœa and, on the whole, he became weaker. In February, 1905, he was brought into the Westminster Hospital and was considered to be suffering from colitis. He was weak, rather anæmic, and had pain and tenderness over the sigmoid flexure; the motions were fluid, dark, and very offensive but did not contain blood or slime. There was rapid improvement and the motions became quite normal in character after daily injections of boric acid. Almost directly after he left the hospital the diarrhœa returned and he again became extremely weak.

On readmission on August 1st he was markedly lethargic and mentally very depressed and there was profound anæmia. He still complained of pain in the left iliac fossa and there was tenderness in this region. There were from five to six dark, semi-solid, and very offensive stools in the day. He had practically no desire for food but complained of considerable thirst. Nothing abnormal was found in the heart or the lungs. The marked anæmia gave rise to the suspicion that parasites were present in the intestine and on August 3rd an examination was made of the fæces, resulting in the discovery of large numbers of the ova of ankylostoma duodenale from which the embryos emerged in two or three days. A blood examination showed considerable anæmia of the chlorotic type and a great increase in the number of the eosinophile cells. The details were as follows: red corpuscles, 3,710,000 per cubic millimetre; white corpuscles, 13,000 per cubic millimetre; polymorphous fine granular cells, 56 per cent.; polymorphous coarse granular cells, 24 per cent. (eosinophile); mononuclear cells, large 11 per cent., small 9 per cent.; and hæmoglobin, 32 per cent. For three days the patient was kept on a diet consisting mainly of milk, with only a little bread-and-butter besides, and then on the evening of August 6th a dose of castor oil was given. On the next morning after defæcation without further food three doses of 20 grains each of thymol were administered at intervals of one hour, followed four hours after the last dose by one ounce of house mixture. No unpleasant symptoms were observed after the thymol and the next day the patient suddenly became ravenously hungry and instead of being depressed and lethargic he became quite cheerful and alert. This was the first time practically that he had had any appetite for three years. The examination of the fæces resulted in the discovery of from 40 to 50 ankylostomata of both sexes and on the two subsequent days some 15 more were passed. A rapid improvement took place in the patient's appearance and strength but the motions remained loose and rather frequent. The blood examination on August 14th was as follows: red corpuscles, 3,890,000 per cubic millimetre; white corpuscles, 13,000 per cubic millimetre; polymorphous fine granular cells, 52 per cent.; polymorphous coarse granular cells, 18 per cent. (eosinophile); mononuclear cells, large 14 per cent., small 16 per cent.; and hæmoglobin, 36 per cent. A regular examination was made of the fæces and on the 21st a few ova were found. A second administration of thymol (60 grains) was carried out in the same manner as previously and again without unpleasant symptoms. Neither ova nor adult worms could again be discovered in the fæces in spite of frequent search. The improvement in the patient's general condition continued without interruption and the motions became normal in character at the beginning of September. On August 29th the blood examination gave the following results: red corpuscles, 4,660,000 per cubic millimetre; white corpuscles, 12,000 per cubic millimetre; polymorphous fine granular cells, 67 per cent.; polymorphous coarse granular cells, 9 per cent. (eosinophile); mononuclear cells, large 10 per cent., small 14 per cent.; and hæmoglobin, 50 per cent. On Sept. 16th the patient was discharged to a convalescent home.

Remarks by Dr. GOSSAGE.—Medical practice in the tropics and elsewhere yields plenty of cases of ankylostomiasis but the disease is of extreme rarity in ordinary hospital practice in London; indeed, the present is the first case met with at the Westminster Hospital. All the ordinary symptoms of the complaint were exhibited—viz., mental depression, weakness, some bowel disturbance, and a gradually increasing anæmia of the chlorotic type with increase of the coarsely granular eosinophile cells. The case responded very satisfactorily to treatment. The early complication with dysentery is interesting and doubtless made the diagnosis more obscure in the early stages.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Subtotal Hysterectomy.—The Diminution of the Alkalinity of the Blood in Eclampsia.—Exhibition of Specimens.

A MEETING of this society was held on Nov. 1st, Mr. A. C. BUTLER-SMYTHE being in the chair.

Mr. ALBAN H. G. DORAN read a paper on Subtotal Hysterectomy for Fibroids which was published in full in THE LANCET of Nov. 4th, p. 1310.—Mrs. FLORENCE N. BOYD, M.D. Brux., suggested that in appraising the effect of operation in the production of menopausic symptoms it was important to bear in mind how varying were the symptoms accompanying the natural menopause in different individuals. In 22 cases of supravaginal amputation with retention of one or both ovaries operated on up to the spring of 1904 she had investigated the after-results. In all but three the results were excellent and in some cases striking as to the general health, and the three exceptions were in poor health before operation. In none were there really severe menopausic symptoms and in only one did a periodic sanguineous discharge persist. In that one she was not

aware that she had left any endometrium but she had noted that one and a half inches of cervix remained. In all the other cases amputation was at or below the internal os.—Dr. HERBERT R. SPENCER said he considered that the title "subtotal" hysterectomy was a horrid expression and, moreover, was inapplicable to an operation in which the whole of the cervix and part of the body were left behind. Personally he had always endeavoured to leave one or both ovaries in every case of hysterectomy for fibroids. It was beyond question that the retention of the ovaries was of value to the patient and was not followed immediately by flushings, whereas flushings usually occurred when the ovaries were removed. Zweifel's views had recently been disproved. He was sorry that he could not at present give the after-histories of his cases for comparison with the after-histories given in Mr. Doran's paper; but as he had in every case endeavoured to leave one or both ovaries behind he had no doubt that they would compare favourably with regard to the occurrence of flushings with Mr. Doran's cases, in nearly half of which both ovaries had been removed. One case, however, was sufficient to disprove the statement that it was essential to preserve a portion of the endometrium. He had two days ago seen a case in which he had performed total abdominal hysterectomy seven years previously for cancer and fibroids in a woman, aged 36 years, one ovary being left behind. The patient had no flushings or other symptoms of the menopause for six years after the operation and then the symptoms were slight. He remained of the opinion that total hysterectomy was greatly superior to the partial operation. The mortality had recently been shown to be less than that of the partial operation.—Dr. HEYWOOD SMITH remarked that in most of the vertebrata the organs for the elimination of the sperm and germ cells respectively were duplicated, but it was not known whether this was merely to guard against disease or accident or for some other purpose. Further investigation into the natural history of menstruation was required in order to judge the effect of the removal of one or both ovaries.—Dr. W. S. A. GRIFFITH said that he altogether disagreed with Mr. Doran in his statement that the preservation of the ovaries in the operation of hysterectomy "is never justifiable when cystic or inflammatory disease is present," a statement which Mr. Doran would certainly not have made had he been writing from the point of view of the diseases of the ovary.—Mr. J. D. MALCOLM said that in his opinion further evidence as to the variation in the severity of the menopause in women generally was desirable. Of the worst cases of climacteric symptoms which he had met with one occurred in a woman, aged 23 years, from whom two dermoids, very adherent from twisting of one pedicle, had been removed; and the other in a woman, aged 54 years, from whom a very hard calcareous uterine tumour was taken four years after the periods ceased. The effects of removal of both ovaries were extremely variable. He was not persuaded by the evidence brought forward by Mr. Doran to alter his practice of removing the uterus completely.

Dr. C. J. NEPEAN LONGRIDGE read a short communication on Diminution of the Alkalinity of the Blood in Eclampsia. The patient had eclampsia during the first labour, in which she was delivered of a stillborn infant. During pregnancy she was seen at frequent intervals and no symptoms of renal inadequacy or toxæmia were found. On the day of admission to Queen Charlotte's Hospital she suffered from headache, vomiting, and diarrhœa, the onset of the symptoms being sudden. Fits began immediately on admission. The blood pressure was 160 millimetres of mercury as measured by the Riva-Rocci instrument. Obstetric treatment was expectant, natural dilatation of the os being completed eight hours after admission; the membranes were ruptured and a full time infant was delivered with forceps. Seven fits occurred before, and one during, delivery. Morphine and purgatives were given. In the next ten hours ten fits increasing in severity occurred, the last three being slight. Jaundice lasting for five days, with labial herpes and itching, was noticed on the third day. The urine was free from albumin on the sixth day and the blood pressure was 120 millimetres of mercury on the third day. Dr. Longridge drew attention to two novel points in treatment. Citrates were given with the object of bringing up the diminished alkalinity of the blood to normal. Sugar was given by the mouth and rectum in order to replace the glycogen in the liver, without which that organ could not exert its antitoxic function.—Dr. M. HANDFIELD-JONES quoted two cases in which the patients had had convulsive seizures in several consecutive confinements and in whom the kidney function had been most regularly performed in the intervals.—Dr. T. W. EDEN said that the observation of Dr. Longridge as to the marked diminution in the alkalinity of the blood might be of great practica limportance, for if it should prove to be a constant occurrence in eclampsia an alkaline solution of definite strength might be used for transfusion.

Dr. WALTER W. H. TATE showed a Fibromyoma of the Uterus associated with a large cavity containing retained menses and communicating with the uterine canal which had been removed from a woman, aged 49 years.

Dr. HANDFIELD-JONES showed a Polypoid Growth which proved to be a pure Myxoma which had been removed from the left labium majus of a woman, aged 38 years.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.—President's Address.—The Opsonic Index in Pulmonary Tuberculosis.

THE first ordinary meeting of the session of this society was held on Nov. 1st, Professor JOHN CHIENE, the President, being in the chair.

The following gentlemen were elected as office bearers for the ensuing session:—President, Dr. James Ormiston Affleck. Vice-Presidents: Sir John Halliday Croom, Professor W. S. Greenfield, and Dr. Byrom Bramwell. Councillors: Dr. John Macpherson, Mr. Alexander Miles, Dr. J. C. Dunlop, Dr. William Elder, Professor Chiene, Mr. H. Alexis Thomson, Dr. R. A. Fleming, and Dr. F. D. Boyd. Treasurer: Dr. H. Harvey Littlejohn. Secretaries: Dr. G. Lovell Gulland and Mr. David Wallace. Editor of Transactions: Dr. William Craig.

Mr. HAROLD J. STILES exhibited the following cases: 1. A girl, aged ten years, to illustrate the treatment of Suppurative Peritonitis by Multiple Drainage. She was admitted to hospital on the third day with a fulminating appendicitis and very severe peritonitis. The incision to remove the gangrenous appendix showed that the abdomen was filled with pus. A second opening was made below the right costal margins to allow of the escape of pus which had collected between the liver and the stomach. A third opening was made in the right loin, a fourth in the left iliac fossa, a fifth in the left loin, and a final drainage was established through the vagina. Subcutaneous saline infusions were employed, with after-treatment of calomel and saline aperients. The openings were made only large enough to allow of the introduction of drainage-tubes. The abdominal cavity was not washed out. 2. A girl to illustrate Volkmann's Contracture after Fracture above the Elbow. The case was sent in as one of musculo-spiral paralysis subsequent to fracture above the condyles. The condition differed from this paralysis, however, in that the muscles of the forearm were not flabby but hard and tense, due to a fibroid change chiefly in the flexor muscles; the hand therefore remained in the flexed position or in the condition of contracture. The child could also to a slight extent bring into play the extensor muscles. There was anæsthesia over the whole hand with sores. The condition was therefore a very severe one. Splints had been applied for four or five weeks and it was on their removal that the present condition was noted. The affection was produced by the application of the splints, subsequently swelling taking place, so interfering with the circulation and causing a fibroid change in the muscles. 3. A patient after operation for Strangulated Intra-abdominal Testicle. He had had several attacks of severe pain, sweating, and vomiting within the last eight months. There was no testicle in the right side of the scrotum and so the diagnosis was made of strangulation of an abdominal testicle—a very rare condition. An incision was made over the right inguinal canal, but as no testicle was present this was enlarged and the finger felt a tumour of about the size of a cricket ball impacted in the pelvis. An additional transverse incision had to be made to allow of its extraction. The pedicle was of the thickness of the thumb and was twisted two and a half times and towards the pelvis, so accounting for the testicle having fallen in and become impacted. 4. A patient after operation for aggravated Ununited Fracture of the Right Femur. An explosion of dynamite had thrown the man high into the air and in his fall he suffered a fracture

of the femur. On admission to the hospital 13 weeks after the accident the limb could be moved in every direction and there was an overlapping of the fragments for a distance of two inches. A posterior incision was made in the region of the biceps to expose the lower fragment which projected into the popliteal space. The ends of the fragments were cut off and after the bone had been brought into position an aluminium plate three inches long was placed over the fracture and secured by four screws in the upper and four in the lower fragment. The wound healed by first intention and the patient has now a useful limb.

The PRESIDENT then delivered his valedictory address. He said that on looking back on past addresses by former Presidents the majority had dealt with the work of the society during the term of office of the speaker. This method had never appealed to himself. "No age could write its own history." The work recently done by this society could not be correctly judged by him at any rate; it was too recent. After referring to the centenary celebrations of John Knox, Sir Thomas Browne, Trafalgar, the Royal College of Surgeons of Edinburgh, and the Royal Medical and Chirurgical Society of London, the President said that he was tempted to linger over Sir Thomas Browne. A contemporary of William Harvey and Isaac Walton, he always thought of these three men together and the great lesson of all-importance in this age of hurry and putting other people right that they seemed to him to teach was the value of time for contemplation and tolerance. Although the Medico-Chirurgical Society of Edinburgh could not yet hold its centenary he could ask the members present to look back with him for 50 years. At that date he found the names of men whom he looked up to as his teachers in the early "sixties" and if there was anything which seemed to appeal to the best in them it was to place on record their thanks to those who had influenced their youth. Marcus Aurelius began the simple story of his life by such a recital, one of his axioms being, "A man should always have in his mind some one or other of the ancient worthies." In 1855 some of those men of whom he wished to speak were pointed out to him when he was an academy schoolboy as worthy citizens of no mean city. Then as now there were the successful men worked off their legs and there were also the quiet, easy-going men who perhaps spent a happier, or at any rate a more restful, life. The President then made brief and kindly reference to Dr. William Sellar, the President of the society in 1855; to Professor Miller, the Vice-President; to Sir Henry Littlejohn, at that time editor of the *Edinburgh Medical Journal*; to Dr. David Gordon; to Dr. Daniel Rutherford Haldane, whose course of lectures on medicine he considered was the most polished he had ever heard; and to Dr. Alexander Wood, who introduced the hypodermic syringe to the notice of the profession. Dr. (afterwards Professor) John Struthers was the treasurer of the society and the secretaries were Dr. (now Sir) W. T. Gairdner and Dr. Warburton Begbie. Of the former it was impossible on account of the nearness of his work to their time to give any just appreciation. Warburton Begbie was, however, the man whom everybody must see if he were seriously ill. He was killed by his work and worries when only 50 years of age. The value of sympathy, courtesy, and concentration were the lessons which Begbie taught his pupils. He also impressed on them the belief in their power of being able to help, however apparently hopeless the case might be, and to do whatever lay to their hand with all their might. The year 1855 should be remembered in the Edinburgh school, for it was the year in which Warburton Begbie, Joseph Lister, and Henry D. Littlejohn began their teaching career in that city as extra academical teachers. The extra academical school had been the nursery of many men who had made their mark in their profession. The President gladly put on record how much he owed to it. It was his foster-mother when he needed help. The welfare of the University was bound up in an extra academical school and he was of opinion that the bonds between these two elements must be more tightly closed. Within recent years many new centres of education had arisen in the old country as well as in the empire beyond the seas and they could not hold their position on the old lines but must reorganise their forces and so be more able to contend in all friendliness with their opponents who were their offspring or, as Sir Thomas Browne put it, "Thus I perceive a man may be buried alive and behold his grave in his own issue"—reading the word "university" for "man." The President then briefly narrated the work which had been done in the Medico-Chirurgical Society during its meetings in 1855, papers having been given by Professor Christison, Mr. J. Spence, and Dr. Broadbent who showed a case of tuberculous leprosy, and it was pointed out that the Swedes spoke of prevention by the "Scottish method"—viz., castration of the males suffering from the disease. Dr. Warburton Begbie had treated of rheumatism and chorea and Dr. Keiller of manual strangulation. Apparently one of the last struggles of the decaying faith in the value of bleeding took place in a discussion during that year. Such a retrospect taught them another lesson, that their time here must come to an end, some in early life, some in old age, some apparently when they could least be spared, —all at the best and proper time, they might be sure of that. The President, in concluding, handed over the pleasures and responsibilities of his office to his successor in the full assurance that the best interests of the Medico-Chirurgical Society would be in safe keeping.—Dr. AFFLECK then took the chair and conveyed the thanks of the society to Professor Chiene for his conduct of the society during the past two sessions.—A vote of thanks to Professor Chiene for his valedictory address was adopted, being proposed by Professor A. R SIMPSON and seconded by Dr. T. S. CLOUSTON.

Dr. DAVID LAWSON and Dr. IAN STRUTHERS STEWART communicated a paper on the Use of the Opsonic Index of the Blood in the Diagnosis and Treatment of Pulmonary Tuberculosis. Starting with a description of the technique employed they then went on to deal with the variations in the opsonic indices of the blood of patients in health and those suffering from various forms of tuberculous disease. Their observations went to confirm the findings of Wright and Bulloch that whereas opsonic indices within the limits of 0·9 and 1·2 were quite compatible with sound health the indices of patients suffering from various forms of tuberculous disease were usually found to be outside of these limits and for the most part below 0·9 in the more subacute and chronic forms and above 1·2 in acute conditions. One glandular case showed an index as high as 2·4. This distinction was one which might be utilised for purposes of diagnosis in difficult cases. Under the action of tuberculin the behaviour of the opsonic indices of the blood of healthy and of tuberculous patients also differed. Whilst in none of the few cases of healthy patients in which tuberculin (TR) had been injected in small doses had the index failed to rise at once, in practically every case it only eventually rose after an initial fall had taken place in the case of tuberculous patients. This feature was of interest both in relation to diagnosis and treatment. Dr. Lawson and Dr. Stewart concluded by showing that so far as they had gone they had quite failed to establish any constant relation between the negative phase and disturbance of temperatu —Dr. ALEXANDER BRUCE said that his experience of value of the opsonic index as a guide to treatme had been favourable and whilst he had not attained such marked success as that claimed by Dr. Lawson and Dr. Stewart in pulmonary cases he was satisfied that in one case of myelitis, one of lupus, and one of glandular tubercle he had observed most gratifying benefit.—Dr. LOVELL GULLAND thought that injections of tuberculin were distinctly dangerous. In the cases narrated by Dr. Lawson and Dr. Stewart then had to remember the more suitable surroundings of those patients who had improved in health and that this might be an explanation instead of the benefits said to be derived from tuberculin. He thought that a considerable fallacy was introduced by counting so few as 30 contiguous corpuscles. It was well known that certain varieties of these corpuscles occurred in clumps.—Mr. STILES said that in this method further observation would go to establish the claims which had been set up as to its value in diagnosis. For, speaking as a surgeon, he often had the greatest possible difficulty in determining whether a given joint case was tuberculous or not; and as the treatment to be adopted was active or passive according as such proved to be non-tuberculous or tuberculous, any measure which would enable him to decide definitely in such cases of doubt would be gladly welcomed.—Dr. THEODORE SHENNAN, Dr. T. F. S. CAVERHILL, and Dr. J. M. BEATTIE having contributed to the discussion, Dr. LAWSON briefly replied, thanking the society for the courteous and appreciative manner in which it had received the report of his work and that of his colleague Dr. Stewart.

The following specimens were exhibited:—

Dr. SHENNAN: Microscopical Demonstration of Spirochæte Pallida.

Dr. BRUCE, Dr. M'DONALD, and Dr. PIRIE: Specimens and Photographs of a Localised Doubling of the Spinal Cord.

Mr. ALEXANDER MILES: (1) Prostate Glands removed by Suprapubic Prostatectomy; (2) Stomach removed by Gastrectomy for Cancer; and (3) Ruptured Extra-uterine Gestation.

Mr. STILES: (1) Tuberculous Kidney; (2) Calculous Pyonephrosis; (3) Hydronephrosis with Hypertrophy of the Opposite Kidney; (4) Gangrenous Gall bladder with Perforation; (5) Strangulated Intra-abdominal Testicle removed by Laparotomy; (6) Prostate removed by Freyer's Method; (7) Portion of Small Intestine resected for Fæcal Fistula following Suppurative Appendicitis; (8) Malignant Stricture of the Œsophagus; (9) Carcinoma of the Ascending Colon; (10) Fæcal Mass impacted above a Malignant Stricture of the Pelvic Colon; and (11) Carcinoma of the Rectum (three specimens).

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF PATHOLOGY.

Presidential Address.—Spirochæte in Syphilis.—Blood containing Mast Cells.—Senile Tuberculosis.

A MEETING of this section was held on Oct. 27th, Dr. J. F. O'CARROLL, the President, being in the chair.

The PRESIDENT delivered the opening address on the Relation between Clinical Medicine and Pathology.

Professor E. J. MCWEENEY read a paper on Spirochæte in Syphilis. He said since the discovery by Schaudinn last spring that a particular variety of spirochæte—the spirochæte pallida—was of regular occurrence in syphilitic chancres, the observation had been confirmed by at least 100 independent investigators working in all parts of the world; and the organism had now been found not merely in primary lesions but in the associated indolent buboes, mucous tubercles, unbroken cutaneous roseolæ, papules, and other forms of eruption, and also in the blood of cases in the secondary stage. Moreover, it had been found in the spleen, the liver, and other internal organs of syphilitic fœtuses. In view of the probability that the organism might turn out to be the cause of syphilis, he thought it of interest to show some specimens which he had taken from chancres and condylomata at the Lock Hospital from cases under the care of Dr. H. FitzGibbon and Dr. G. E. Pugin Meldon, to whom, as well as to Colonel W. J. Baker, R.A.M.C., Major R. L. R. Macleod, R.A.M.C., and Captain Falkner, R.A.M.C., the officers in charge of the Arbour Hill Military Hospital, he expressed his thanks for permission to use the material under their control. By way of contrast he showed spirochæte refringens, a somewhat thicker and less closely coiled form from non-specific condylomata. Schaudinn had quite recently described locomotive organs in these parasites—terminal cilia in the case of spirochæte pallida and an undulating membrane in the case of spirochæte refringens. Professor McWeeney showed, by way of illustration, a specimen of a huge spirillum, 45 μ long, with cilia on each end, which he had cultivated from sewage.

Professor MCWEENEY also showed specimens of Blood containing Mast Cells made from the blood of a man, aged 34 years, a patient of Dr. Martin Dempsey in the Mater Misericordiæ Hospital, suffering from anæmia of obscure nature attended with attacks of bleeding from the lower bowel and slight albuminuria. The blood count was very remarkable: red corpuscles, 2,856,000 per cubic millimetre; white corpuscles, 11,300 per cubic millimetre; polynuclears, 46·5 per cent.; small lymphocytes, 15·3; large mononuclears, 27·0; eosinophiles, 7·2; and mast cells, 2·6—the coarsely granular cells being thus 9·8 per cent. of all leucocytes. There was marked mononucleosis, especially prominent being the large hyaline mononuclears. There was marked granular degeneration of the red cells in many cases (punctate basophilia), but normoblasts were very scarce and megaloblasts were absent. Hæmoglobin was 45 per cent. After a week under treatment with iron and arsenic the mast cells had undergone marked diminution, specimens being hard to find, but the eosinophiles were as numerous as before.

Professor MCWEENEY also showed an Unusual Form of Senile Tuberculosis. The specimen consisted of the lung of a woman, aged 75 years, who in the street was suddenly seized with profuse hæmorrhage from the mouth and nose and died immediately after admission to hospital. At the necropsy a tuberculous condition of the lower part of the right lung was found which had converted most of the middle lobe into a dense cicatricial tissue of greyish hue. The lower lobe was studded with very large slate-grey tubercles and there was a single small cavity as big as a hazel nut which had ulcerated into a branch of the pulmonary artery and given rise to the fatal hæmorrhage. The cavity was lined with caseous matter swarming with tubercle bacilli, many of which were peculiarly branched. The occurrence of fatal pulmonary hæmorrhage from tuberculosis in a patient aged 75 years seemed sufficiently unusual to justify its being brought forward.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Nov. 1st.—Dr. J. Dreschfeld read a paper entitled "Some Points in the Diagnosis and Treatment of Graves's Disease." In the course of his remarks he said that Graves's disease was mostly a chronic disease, but an acute form also occurred in two different types. In the one affecting chiefly young people and occurring also during pregnancy the prominent symptoms were well marked, but the patient did not suffer very much and recovery often occurred in the course of a few months, even without any treatment; in the other the affection was characterised by rapid and progressive emaciation, rise of temperature, great weakness, excitement, and delirium, and often terminated fatally a few weeks or a few months after the onset. Of the symptoms in the ordinary form of chronic Graves's disease those relating to the vascular system were more specially alluded to. A symptom seen in almost all cases of Graves's disease and no doubt noted by all observers, but not specially mentioned, was the vaso-motor irritability known as dermography, which was not only very marked and persisted for some minutes but might give rise to a distinct swelling—the urticaria factitia of Gull. Though this sign, like many of the other symptoms, such as the tachycardia, the tremor, &c., was present in other affections, yet it might help in the diagnosis of the "forme fruste" of Graves's disease. Of the numerous nervous symptoms, whilst the sudden giving way of the legs was very common, paresis and paralysis were very rare. In one case almost complete paralysis was noticed, and this was purely functional. After speaking of the relation of Graves's disease to myxœdema Dr. Dreschfeld went on to say that the incomplete or abortive form of Graves's disease might be divided into three groups. 1. Cases in which goitre had existed for many years and in which either suddenly or more gradually the patient complained of palpitation, had tachycardia, and showed excitement and tremor. 2. Cases which were chiefly noticed in young persons and where without there being exophthalmos there were an irritable and excited heart, cardiac dilatation and quick pulse, hyperhidrosis, and moderate goitre. 3. Cases of neurasthenia or hysteria, or cases of mental disease, in which the above symptoms appeared. As some of these were seen in hysteria and also in neurasthenia the diagnosis of these cases was not always easy and it was only the combination of all the symptoms, especially the tachycardia and moderately enlarged thyroid, which would help in the diagnosis. Coming to the treatment of Graves's disease, besides the hygienic treatment the result of the treatment with organic extracts was briefly discussed. Adrenalin might do good in those cases in which there was a low arterial tension; thyroid extract in some cases relieved the symptoms, especially in those in which the thyroid showed marked fibroid thickening and not soft, pulsating swelling over which often a systolic bruit could be heard. The antithyroid serum of Moebius had in some cases given very good results; of seven hospital cases three were cured and two improved and of ten private cases five were cured and two improved. The good results which Kocher obtained by operation (of 59 cases operated on four died, 45 were cured, eight improved, and two experienced no relief) were mentioned. Surgical treatment might be advised in some cases in which medical treatment failed.—Mr. F. A. Southam made some remarks on Traumatism as an exciting cause of Acute Appendicitis and mentioned four cases occurring in boys where the attack developed immediately after the receipt of an injury. It was pointed out that when appendicitis followed an injury it was probable that the appendix was previously in an unhealthy or abnormal condition, either containing a concretion or being stenosed and distended with fluid. When following a strain of the abdominal muscles the attack was probably

due to the separation or rupture of adhesions between the appendix and abdominal wall, the result of previous inflammatory attacks.—Mr. E. Stanmore Bishop brought forward several cases illustrating the value of Murphy's test for Biliary Calculi. He commented on the untrustworthiness of the symptoms usually assigned to that condition and mentioned certain other cases showing the difficulties sometimes experienced in their diagnosis. He had operated upon 66 cases, with four deaths. Two patients were shown to demonstrate the results of Robson's and Rutherford Morison's methods of incision.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—A general meeting of this society was held on Oct. 26th, Dr. Frederic Bagshawe (Hastings) being in the chair.—The balance-sheet having been adopted, Dr. Bagshawe introduced the new President, Dr. G. W. Hamilton Cumming (Torquay), who presided at the ordinary meeting and gave an address entitled "Climatic Treatment of Old Age and Senile Diseases."—Dr. W. Moxon (Matlock) proposed, and Dr. Symes-Thompson seconded, a vote of thanks to the President.—Dr. R. W. Felkin read a paper on Sea Voyages for Invalids in which he said: "In recommending sea voyages there are many things to be considered. Life on board ship is no longer what it used to be; the present rush and excitement which obtain on the big ocean liners are most undesirable from a medical point of view; the rapid transit and impossibility of getting away from 'news' militate against the tranquillity which was one of the chief charms of sea voyages for invalids 20 years ago. Still the invigorating sea breezes, the sea baths, and the complete change of surroundings remain and in advising a long voyage great regard must be paid to individual constitutions and as a rule a companion is desirable. Perhaps the time is not far distant when British ship owners will follow the suggestion of Sir Hermann Weber (a suggestion already acted on by the Hamburg-American Company) and start therapeutic ships specially arranged for different classes of invalids." In conclusion, Dr. Felkin referred to the "desert camps" which are being established near Helouan and other places. He remarked that he had proposed these some five or six years ago and considered that they were likely to prove much more beneficial than the sea voyages or conventional trips abroad.—Dr. Symes-Thompson referred to the diminishing therapeutic value of sea voyages consequent upon the excessive speed and undue luxury of our "floating palaces."—Dr. Moxon observed that having acted as surgeon to an African liner he had formed a very definite opinion as to the proper class of cases to benefit by a sea voyage. Patients recovering from acute illnesses and those suffering from over-work (providing there was no tendency to depression or melancholia) were the most suitable, but if there was any serious amount of organic disease the confined cabin space, the deterioration of food, and the inconvenience and discomfort arising from bad weather more than outweighed the other benefits to be derived from a sea voyage.—Dr. F. M. Sandwith considered that more care should be taken by the home medical adviser in selecting a special steamer, route, and destination and that the invalid should be officially handed over to the ship's surgeon, so that the latter might control the diet, exercise, and life generally of the patient while on board. He also thought that no one should be despatched on a long sea voyage unless there were grounds for believing that he was likely to enjoy life on board ship.—Dr. P. G. Lewis (Folkestone) contended that all the good effects of a sea voyage could be obtained without the attendant disadvantages by staying on land and crossing the Channel each way on suitable days.—Mr. J. T. Gardner (Chelsea) spoke strongly in favour of sea voyages, provided judgment was used as to the choice of ship and locality. He also made some remarks as to the treatment of sea sickness.—Dr. W. V. Snow (Bournemouth) said that the beneficial effects of a sea voyage must be largely discounted by stuffy cabins, card playing, and (especially in young men) alcoholic excess.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 2nd, Dr. A. Newsholme, the President, being in the chair.—Dr. E. F. Maynard showed a case of Xanthoma Tuberosum in a woman who had been successfully operated on for obstructive jaundice a year ago. In the flexures of the hands the plaques were very marked and on the extensor surface of the forearms the nodules were as large as marbles.—Dr. W. Williams showed specimens of Favus and a case of Old-standing Lupus which had been successfully treated by painting with a solution of eosin and exposure to sunlight.—Dr. F. G. Bushnell read a paper on Splenomyelogenous Leukæmia, describing fully the different forms of leucocytes and their mode of formation and drawing attention to the imperceptible gradations between large lymphocytes without granules and with fine granules and myelocytes.—Dr. F. J. Paley showed a child, aged four years, on whom he had performed Tendon Transplantation for Infantile Paralysis with excellent result, the child now walking well.—Dr. Walter Broadbent showed a girl, aged 16 years, with most of the signs of adherent pericardium, an apex beat situated higher than normal and which moved very little on turning the patient from one side to the other; increased cardiac dulness, especially to the right of the sternum, which was not much diminished by deep inspiration; and systolic retraction of the lower ribs behind on both sides. He showed, too, a Cretin much improved by treatment with thyroid extract. He also read a paper on the Congress of Tuberculosis, drawing attention to the excellent results obtained at Berck in surgical tuberculosis by simple rest and fresh air, quoting M. Calot's dictum, that to open a tuberculous focus is to open the door by which death enters. He pointed out how far in advance of us the French were in the treatment of pre-tuberculous and tuberculous children and young people, but, nevertheless, the death-rate from tuberculosis in France was only falling very slowly, probably, as Dr. Newsholme had concluded, because they made no provision for advanced cases, leaving them to spread infection broadcast.—The paper was discussed by the President, Mr. T. J. Verrall, Dr. E. Hobhouse, Mr. A. H. Buck, Dr. Bushnell, Mr. V. T. Greenyer, and others.

THERAPEUTICAL SOCIETY.—A meeting of this society was held in Apothecaries Hall on Oct. 24th, Sir Lauder Brunton being in the chair.—Dr. Herbert S. French reported on the health and education congress in London as delegate. The subjects which were therapeutically interesting were: (1) the physical drill of girls with elaborate movements well performed; (2) the development of trypanosomes; and (3) the sterilisation of milk for infants.—Mr. T. R. Elliott communicated a paper on Adrenalin Derived from the Medulla of Suprarenal Capsules. Of the three divisions of the sympathetic cranial, thoraco-lumbar, and sacral—the thoraco-lumbar alone had the same action on plain muscles as adrenalin locally applied. Both constricted blood-vessels, except the coronary and pulmonary arteries, both relaxed the muscles of the stomach and intestines, and neither affected the bronchioles, while nerves from other sympathetic regions acted in an opposite manner; hence adrenalin might be a test for the connexion of sympathetic nerves with ganglia. For therapeusis adrenalin must be applied locally. If injected subcutaneously it affected only the area injected. If all nerve cells which acted like adrenalin were removed the circulation failed and the animal died but all the sympathetic ganglia not acting like adrenalin might be removed and the animal lived. Adrenalin was useful when the suprarenal glands were impaired in Addison's disease and perhaps in diphtheria and typhoid fever, but in large doses it was poisonous, causing paralysis of nerves and death.—Dr. Steele and Dr. Plant spoke of the treatment of serous effusions by the injection of one drachm of adrenalin chloride with from half an ounce to one ounce of sterilised water. In one case no return of dropsy occurred after one injection. In two cases a little fluid returned but was soon absorbed after one injection and did not recur. A fourth case required three injections before the fluid disappeared and did not recur. In the fifth the fluid did not entirely disappear but the interval between tapping was extended to 92 days. And in the sixth case the fluid disappeared but the patient died from mitral disease. The injection caused slight rise of temperature for a few hours and sometimes severe pain in the liver for one night, but no other ill effects.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Nov. 3rd, Mr. W. Campbell M'Donnell, the President, being in the chair.—Mr. H. W. Carson read a paper on the Indications for Operation in Appendicitis. He said that appendicitis was now looked upon as a surgical condition from the first and that it was urgently necessary to educate the public to understand that appendicitis was the most uncertain of acute diseases and that delay in following

the advice of the medical practitioner was responsible for a great part of the heavy mortality of the disease. He emphasised the fact that the dangers in appendicitis followed the formation of an abscess, which should be guarded against by every means in their power. As a very considerable proportion of cases recurred he had no hesitation in advising removal of the appendix after the first attack. He dwelt fully on the methods of examination and insisted that a rectal examination must be made in all cases. The many signs and symptoms were fully discussed with a view to decide upon the stage of the disease and the indications for operation. He drew a definite distinction between adults and children and considered that the cause of appendicitis in children was so variable, the onset of severe symptoms so sudden, and the liability to general peritonitis so great, that it was better to consider that a mild attack did not occur and that an operation should be advised. In the treatment of acute appendicitis in the adult opinion in this country was steadily advancing in favour of earlier operation. The danger to life and the chance of later complications depended upon the occurrence of suppuration in the peritoneal cavity, hence it was obvious that they must look upon abscess formation as a disaster and that their first duty was to prevent it, which could be done by an early operation before pus had time to form. He considered that an operation in the acute stage was comparatively free from risk and from difficulty and besides it had the great advantage of shortening the convalescence.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—This society held a clinical evening on Nov. 3rd, Mr. L. A. Bidwell, the President, being in the chair.—The President showed a case of Congenital Syphilitic Disease of the Tongue. He pointed out that the patient, a woman, was not benefited by iodides but improved rapidly under mercurial treatment. Her tongue was much worse when she was pregnant but even when this was so she was delivered of a healthy child.—The President also showed for Dr. Beale a case of Congenital Papillomata of the Tongue for comparison.—Dr. Seymour Taylor showed a case of Myoclonus and pointed out that the causation of this condition was ill understood.—Two marked cases of Adolescent Coxa Vara, both males, were brought before the society by Mr. W. McAdam Eccles who demonstrated the marked elevation of the trochanter and limitation of abduction, and also showed some beautiful skiagrams of the condition. He remarked that this condition was first drawn attention to in this country, though under another name, by a founder of the society, Mr. C. B. B. Keetley.—Mr. E. Laming Evans showed a case of Deformity of the Femur of uncertain nature, and also a Femur obtained recently in the excavations at St. Bartholomew's Hospital, which must be at least 200 years old but which showed marked signs of coxa vara.—Dr. E. A. Saunders brought before the society three cases, one of Acromegaly, one of Osteitis Deformans, and a third of Myxœdema, and gave an instructive comparison and contrast of their similarities and differences.—A case of a new Growth of the Sublingual Gland was shown by Dr. L. C. T. Dobson who said that it was most probably of similar nature to the mixed tumours more commonly seen in the parotid.—A case shown by Dr. J. F. Halls Dally was a very noteworthy example of enormous Gouty Deposits in both Hands; the condition of the bones was demonstrated by skiagrams.

WINDSOR AND DISTRICT MEDICAL SOCIETY.—The annual general meeting of this society was held at the Guildhall, Windsor, on Oct. 25th, Mr. W. B. Holderness, the President, being in the chair.—The business transacted included the reading of the minutes of the last annual general meeting, the adoption of the balance-sheet, the reading of the annual report of the progress of the society by the honorary secretary, and the election of the officers for the ensuing session. Mr. Holderness was re-elected President of the society. The first ordinary meeting of the session then took place, when Mr. Hastings Gilford read a paper on a series of cases illustrating the Significance of Sudden Abdominal Pain. Instances of ruptured abdominal aneurysm, of thrombus of the mesenteric veins, and of ruptured gastric ulcer were alluded to, but the greater part of the paper was taken up with examples of pain due to the escape of small quantities of gastric fluid and to the rupture of the sacs of ectopic gestation of less than one month standing. The former were termed gastric leaks and the latter were, for the sake of convenience, classed as "premensal" ruptures. The insuperable difficulties which might be associated with the diagnosis of these conditions were referred to as well as the nature of the symptoms most helpful in separating them from other causes of abdominal pain.—A brief discussion followed, in which Dr. Hawkins, Dr. F. J. Hathaway, Dr. J. O. Skevington, and Dr. Tomlinson took part, the last two speakers reciting cases instancing the extreme difficulty of accurate diagnosis in these conditions.—The proceedings terminated with a vote of thanks to Mr. Hastings Gilford for his lucid address.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Nov. 3rd, Mr. Edward Ward being in the chair.—The following cases and pathological specimens were shown:—Mr. B. G. A. Moynihan: (1) Specimens of Hæmatosalpinx; (2) Malignant Growths removed from the Sigmoid Flexure and Rectum; (3) a Disease of the Rectum simulating Carcinoma; and (4) 12 Malignant Tumours of the Kidney.—Dr. Andrew Little: (1) Rupture of the Choroid; (2) Sarcoma of the Choroid; and (3) Sarcoma of the Iris.—Dr. T. Churton: A Liver which pulsated during life with the heart from the same case.—Mr. Walter Thompson: A large Horn on an Arm associated with an Epithelioma.—Dr. Carlton Oldfield: (1) Volvulus of the Sigmoid Flexure; (2) Uterine Casts; and (3) Meningeal Hæmorrhage in a Child delivered by forceps through a small round pelvis.—Mr. J. Stewart: A specimen of Intra-uterine Amputation in process of execution.—Professor A. S. F. Grünbaum: (1) Three cases of Meningitis; (2) Sarcomatosis of the Central Nervous System; and (3) Leontiasis Ossea (a cast).—Mr. A. L. Whitehead: (1) Some Temporal Bones from Cases of Mastoid Disease with Fatal Complications; (2) a large Nasal Polypus; and (3) a photograph of a case of Primary Chancre of the Eyelid.—Dr. W. H. M. Telling: (1) Bronchiectatic Lung from an infant; and (2) Collapse of the Trachea in a rickety infant.—Mr. R. Lawford Knaggs: (1) Malignant Disease of the Biliary Papilla in the Duodenum; (2) two specimens illustrating Perforations of the Intestine in cases of Appendicitis; and (3) section through a Leg the subject of Infantile Paralysis.

SOCIETY OF ANÆSTHETISTS.—The opening meeting of the session of this society was held on Nov. 3rd, Dr. Edgar Willett, the President, being in the chair.—Dr. B. J. Collingwood read a paper on Dosage and Methods of Administration of Chloroform. He spoke purely from the physiological standpoint and after pointing out that in ordinary usage the dose of chloroform meant the amount administered, not the amount inhaled or absorbed, he showed how at first there was a steep descent from the percentage in the inspired air to the percentage in the tissues, the alveolar air and the blood and lymph being intermediate. In later stages there was close approximation between the percentage in inspired air and that in the tissues; consequently the strength of vapour offered had to be lowered greatly in the course of long administrations. The effect of slowing respiration and of slowing circulation, the decomposition of chloroform in the organism, the estimation of chloroform in inspired air, and the desiderata for clinical apparatus were other points considered.—The President, Dr. J. F. W. Silk, Dr. F. M. Dickinson Berry, Dr. A. G. Levy, Dr. J. Blumfeld, Dr. W. J. McCardie, Mr. Harvey Hilliard, and Mr. L. Kirkby Thomas contributed to the discussion which followed.

Reviews and Notices of Books.

My Life: A Record of Events and Opinions. By ALFRED RUSSEL WALLACE. Two vols. With facsimile Letters, Illustrations, and Portraits. London: Chapman and Hall. Royal 8vo. Vol. I., pp. 435; Vol. II., pp. 449. 1905. Price 25*s.* net.

THE use of biography as an incentive and as a guide to others is plainly increased if the author of the biography be the subject thereof. Minute details of deportment, mannerisms, and carping criticism generally, which unfortunately often bulk so largely in contemporary estimate, on that detestable and exceedingly usual "no man is a hero to his valet" attitude of mind, are thereby eliminated, while minute personal traits of interest as helping to complete the series of portraits can be introduced by the free admission of correspondence with others. On broader matters there is no

doubt that a man is the best critic of himself when of course he has arrived at a period of life in which "swelled headedness," if ever present, has given way to treatment and when his work has passed through the hands of others for criticism, confirmation, alteration, or completion. Dr. Wallace, who, though more than 80 years of age, is evidently in the full prime of his intellectual capacities, has adopted this plan instead of leaving to another or to others the task of providing the scientific student of the future with a possibly false estimate of the relation between environment and scientific development. We are therefore grateful to one of the leaders of scientific thought in this and the last century for having undertaken this duty himself and presented us with as full a monograph as possible of an important and a well-famed personality. The co-discoverer with Darwin of the principle of natural selection arrived at his generalisation by a narrower path than the broad route that led Darwin thither. Dr. Wallace was, and is, a naturalist in the older sense of the word, an observer of living creatures and a recorder of external form. Darwin, on the other hand, was a master in his time of the anatomical side of zoology and was as much at home with the scalpel and microscope as with a field glass. It is, or has been, the custom to sneer at the museum man who skins his bird and "throws away its characters" as a futile student of zoology, rather blocking the way until he is of service in producing trustworthy lists for the use of others. It might seem, therefore, that Dr. Wallace's record was a triumphant re-establishment of the high importance of the furrier and the plumassier type of systematist, as we have heard them termed, until we reflect upon the facts a little more nearly.

The work of Dr. Wallace tended towards, because it was directed towards, one great aim, the explanation of certain of the facts of zoology. The mere describer of new species, even if he be thorough, which among the students of vertebrate animals he never is, is simply a barren specialist, sterile not only for himself but to others, for the facts which he industriously collects can serve no purpose in inquiry into the problems of zoology. We can trace in the volumes before us the causes which influenced Dr. Wallace's selection of his life's work. The author of the biography details the events of his life with a candour which is far removed from egotism, an accusation which he fears in the preface. It would, indeed, be somewhat unnecessary to write the life of a man in two volumes, in the contents of which that life formed merely an incident. This candour is most inspiring to us. Just as the Catholic is reassured by the candid confessions of St. Augustin, so we students of science and authors in our modest way may receive refreshment and encouragement by learning that Dr. Wallace was at times very "slack" and that leisurely work with an absence of meddlesomeness, which frequently passes current for energy, may lead to the finest intellectual results. There have been also many subsequently distinguished men who did not inspire their pastors and masters with the impression of genius when of tender or even more advanced years. So we learn that a failure to set the Thames on fire in early life does not necessarily mean an incapacity for achievement later. There are even stories about an undue indulgence in port. But we hasten to add that, like Dr Johnson, who claimed to have been a two bottle man, our author speaks of the dim past. Another comforting reflection which emerges from these pages is that Dr. Wallace has not been successful in obtaining official posts. It is another example added to many and to two notorious ones a good many years ago when Huxley and Louis Agassiz were rejected by two sectarian universities, to use a paradoxically true collocation of contradictory terms. The most positive fact as bearing upon the author's subsequent success in life, intellectually speaking, seems to us to be the rapid, continuous, and varied change of locality, and therefore of impressions and brain stimuli. He dwelt in no less than "five different houses in Hertford" and we are hurried at almost every page from Usk to Hertford, from Leighton Buzzard to Neath, from the Amazons to the Malay Archipelago, or from Brecknock to London.

Perhaps, too, a slight strain of perversity, inherent in human nature or at least in British human nature—namely, the desire to do something that is not one's proper business—may not have been without influence in contributing to mould the mental attitude of Dr. Wallace. Most of us have felt the allurements of a course of action or study which other occupations render impossible to follow out. Be that as it may, the general love of natural history, which his life as a surveyor enabled Dr. Wallace to indulge in to a moderate extent, was suddenly acted upon by an apparently minute fragment of leaven, an article in the *Gardener's Chronicle* by Dr. Lindley. From that time Dr. Wallace devoted himself entirely to natural history and commenced his scientific life by that celebrated voyage to the Amazons in company with his friend, the late H. W. Bates. The object of this voyage and of the subsequent travels in the Malay Archipelago was, frankly, partly to obtain a livelihood by the sale of collections of birds and insects. This part of the author's life has been so long before the public that we need not dwell upon it here. The story is told in his books and the grand result, the promulgation of the idea of natural selection, is familiar to the world. On his return to London Dr. Wallace mixed with the zoological world and many of the prominent figures of that world flit across his pages or make a longer stay there. Of Darwin naturally a great deal is said and many letters are quoted. The cordial recognition of each other's merits by these two men is one of the pleasantest facts in the history of zoology in this country. Upon both of them, too, though in another sense from the usual interpretation of the line, "greatness was thrust," for modesty and whole-hearted devotion to science alone would not have obtained for either the position which the sheer magnitude of their discovery rendered inevitable. Of the late Dr. St. George Mivart, that naturalist of great though eccentric ability, Dr. Wallace has a good deal to say. Though in profound disagreement intellectually about evolutionary topics Dr. Wallace found in Dr. Mivart, as others have found, a "man of friendly geniality, refined manners, and interesting conversation." Huxley first appeared upon Dr. Wallace's horizon in 1852 on the occasion of the former reading a paper at the Zoological Society upon the tapeworm echinococcus. Dr. Wallace was struck "with his wonderful power of making a difficult and rather complex subject perfectly intelligible and extremely interesting," which is precisely what Huxley did excel in doing. The power of mind and knowledge of Huxley, then only 27 years old but a Fellow of the Royal Society, impressed Dr. Wallace with the idea of greater age and it was with surprise that many years after he discovered that Huxley was really two years younger than himself. Unlike Darwin but like Huxley, Dr. Wallace devoted a great deal of his time to dealing with subjects outside his own particular studies. His attitude towards land nationalisation, vaccination, and especially spiritualism will be long remembered. Spiritualism struck him first of all as necessarily either "imposture or delusion." Experiment led him to a different opinion, as he relates in some detail. In this matter Dr. Wallace reproaches scientific men for their initial incredulity. Tyndall, he says, for example, while expressing a readiness to be convinced, refused to take part in an experiment and only went once to a séance, whereas Dr. Wallace's main contention was that nothing need happen at first or even for many subsequent times. Huxley declined in a characteristic note in which he wrote: "As for investigating the matter—I have half-a-dozen investigations of infinitely greater interest to me ..... I give it up for the

same reason I abstain from chess—it's too amusing to be fair work, and too hard work to be amusing." Possibly some readers will find the lengthy disquisition upon spiritualism the most interesting part of Dr. Wallace's autobiography, not because the rest of these numerous pages pale in interest by contrast but because of the, to many of us, astounding fact that a man of Dr. Wallace's undoubted achievements in science and clearness in argument should have been convinced by what is unquestionably generally held to be at least largely imposture. But whether this autobiography attracts for this reason or for others there is no doubt in our mind that it will find plenty of readers.

The Medical Diseases of Egypt. By F. M. SANDWITH, M.D. Durh., F.R.C.P. Lond. Part I. London: Henry Kimpton. 1905. Pp. 316. Price 7*s.* 6*d.*

IT is somewhat astonishing, considering the position which England occupies in the colonising world, that so few works on diseases of the tropics have been produced by her sons. In Germany we find the encyclopædic works of Scheube, Meuse, and Dums amongst others; and in France those of Marvaud and Dantec, as well as the erudite volume on "Les Maladies Exotiques" in the Traité de Médecine in course of publication under the editorship of Dr. Brouardel and Dr. Gilbert. But of recent years Sir Patrick Manson is the sole British author who has treated of these disease comprehensively, the work of the late Professor W. C. Maclean being unfortunately not up to date. The treatise under review will help to relieve English medicine of this reproach. Dr. Sandwith's qualification to speak of the diseases of which he writes cannot be questioned, since he went to Egypt so far back as 1883 to study the epidemic of cholera and was then invited to remain. The present volume is the result of his experience as physician to the Kasr-el-Aini Hospital, Cairo.

The opening chapter deals with the subject of medical disease in Egypt and is replete with interest to the student of ancient medical lore. We then come to the consideration of the continued fevers. In the chapter on typhus fever a most graphic description is given of the state of the prison cells in the outbreak which occurred in 1886; it is a matter of wonder that a single inhabitant of the prison escaped infection. Enteric fever, according to the author's experience, is distinctly rare amongst the Egyptians; he combats the view that the absence of attacks in adult Egyptians is due to their having suffered from the disease in youth, by the fact that whereas he has been present at several hundred necropsies of children under five years of age, in not one single instance was there found pathological evidence of enteric fever. It is, indeed, a very rare disease in the wards of the Egyptian Government hospitals; thus there were only six cases out of a total of 8752 admissions in 12 years. In the European hospitals, on the contrary, it is seldom absent. As regards its etiology, Dr. Sandwith states that during the last ten years dozens of cases have been reported showing that infection by contact is quite possible in the absence of scrupulous cleanliness in the management of previous cases. He also distinctly holds that the fever is not always water-borne but may be communicated by dust, clothing, bedding, or flies. With respect to symptoms the eruption was not seen on the Egyptians as a rule; gurgling in the right iliac fossa was of no diagnostic value, but tenderness there on slight pressure is extremely useful in doubtful cases. Constipation was present in 48 per cent. of the cases. Yellow stools also are of very little use in the diagnosis, although a peculiar liquid light-brown stool was very suggestive. As regards drugs Dr. Sandwith has small faith in any antiseptic action. He does not appear, however, to have tried oil of turpentine which is recommended so strongly by Dr. R. M. Simon of Birmingham.

A very interesting section is that on infectious jaundice, or Weil's disease, the transmitter of which may very likely prove to be the culex fatigans. The clinical features and the history of this affection are pourtrayed in a very complete manner, much more so than is usually the case in English text-books of medicine. The chapter on smallpox contains an excellent *résumé* of the practice of inoculation and vaccination in Egypt. Influenza would appear to have attacked this country severely: in 1890 more than one-third of the population suffered from the disease, which has been prevalent from 1889 onwards. In treating of plague the author has given us an excellent chapter. The latter opens with the history of the affection as it has occurred in Egypt and the account given is a striking example of the labour that must have been necessitated in the preparation of this work. The bacteriology of the disease is then described with the other points in its etiology. In speaking of the connexion between plague in the rat and in man the author details all the facts bearing on the former as the vehicle of spreading infection: the infected rat suffers from the septicæmic form of plague and its excreta, teeming with the bacilli, are then widely distributed throughout the dwelling and storehouses, and hence the importance of the medical inspection of rats in vessels from an infected port. The modes of entry of the disease are by inoculation, by inhalation, and by the tonsils. The clinical pictures of the three chief varieties, the bubonic, septicæmic, and pneumonic, followed by the morbid anatomy, are detailed. The medical man is instructed how to obtain material for bacteriological examination. The means of prevention are most exhaustively entered into and here we note the success of the anti-plague measures in Egypt, the credit for which must be assigned to the exertions of the officials of the sanitary department of that country. The practical measures for stamping out plague in Egypt that are now employed cannot well be improved upon and the credit of the success of these various anti-plague measures is given to the Khedivial decree of May, 1899, whereby the sanitary authorities were granted power to inspect any houses where they believed that patients suffering from this disease lay hidden. In the treatment, the use of large doses of carbolic acid does not appear to have been tried. The conclusions of the Indian Plague Commission on the subject of inoculation are given, showing the great advantage of this method.

The subject of bilharziosis is next dealt with and this is, we think, one of the best accounts at present to be found in English literature. In its treatment the author considers that the most successful results are given by male fern. Methylene blue, as recommended by Lelean, is not mentioned as having any curative action but is said to be useful where there is great tenesmus. Another valuable chapter is that on ankylostomiasis. Here is fully described the mode of entry of the parasite through the skin, which was first demonstrated by the author's colleague Dr Looss. The work closes with an account of pellagra, the recognition of which disease in Egypt is due to the author. In 1893, suspecting the existence of pellagra in Egypt, Dr. Sandwith visited Italy in order to study the disease and found that the affection in this latter country was identical with the cases observed by him in Egypt, the only points of difference being a wider dissemination of the skin lesions and a modification of the complications of the disease due to the different habits of the peasantry in the two countries.

In concluding this notice of Dr. Sandwith's excellent work we can only express the great pleasure which we have had in perusing it and we look forward with much interest to the completion of a treatise which should find a place in the library of every student of tropical medicine. Part I. contains three beautifully executed plates of the ankylostomum, of the pellagrous skin affection, and of the pellagrous spinal cord.

LIBRARY TABLE.

Manual of Operative Surgery. By JOHN FAIRBAIRN BINNIE, A.M., C.M. Aberd., Professor of Surgery, Kansas State University, Kansas City; Fellow of the American Surgical Association; Membre de la Société Internationale de Chirurgie. Second edition, revised and enlarged. With 567 illustrations, a number of which are printed in colours. London: H. K. Lewis. 1905. Pp. 655. Price 12*s.* 6*d.* net.—The title of this excellent book does not do justice to it. At first sight we thought that it was one of the many treatises intended to instruct the student in the manner of operating on the dead body, but it is not so. In the first place, all amputations are omitted and nothing is said as to the mode of tying arteries in their continuity, two matters which occupy a large proportion of the bulk of all the ordinary text-books, but the author tells us that he thinks these are sufficiently described in the works on general surgery and it is certain that by making these omissions much room has been found for other subjects. Operations on the bones and joints of the limbs are also omitted as the author considered that he had not sufficient space for them. We have commenced by saying what the book omits; as to its contents we may express ourselves as very pleased with the manner and matter. The style is succinct and no unnecessary word is used. In most operations the description is divided into "steps" and this certainly makes it much easier for the reader to follow. The illustrations are numerous and some of the diagrams are very happy and likely to prove of great service. It would be easy in so extensive a work to find much to criticise but we prefer to express our hearty approval both of the design of the work and the manner of its execution. It will be of value to students preparing for the higher examinations in surgery but chiefly to operating surgeons who wish to look up the methods of performing any operation. All the newest operations and methods are included and it is remarkable how much is contained in the book.

Annual Report of the Imperial Bacteriologist (India) for the Year 1904-05. Calcutta: Office of the Superintendent of Government Printing, India. 1905. Pp. 24.—This report shows the enormous amount of work that has been conducted by Dr. Alfred Lingard, the head of the laboratory at Mukhtesar. He was assisted by Captain J. D. E. Holmes, Mr. Max Kriebel, and Mr. R. E. Montgomery. During the year under report the greater portion of the officers' time was occupied in the preparation of rinderpest and anthrax serums, together with mallein. A dried form of rinderpest serum was prepared and tried in the field. In addition a series of experiments was conducted on numerous cases of dourine in equines and surra in equines and camels. A series of investigations was carried out at Bareilly to observe the course of rinderpest in camels, and lastly the effect of arsenic, trypan-rot, and both in combination, on the destruction of the trypanosoma of surra *in vivo* was investigated. In addition to the above work Dr. Lingard also publishes important papers having reference to rinderpest, trypanosomata, piroplasmosis, and filaria. But apart from this scientific labour other valuable work was undertaken, including the giving of courses of instruction to officers of the army and civil veterinary departments. Veterinary assistants were also trained at Mukhtesar and Bareilly. With regard to rinderpest a decrease in virulence was found to occur when it is passed from animal to animal through a long series of hill cattle. This is an important fact, as it shows the great care necessary in ascertaining that blood used for testing is as virulent as possible. Amongst other points in this interesting report we note that Dr. Lingard has not as yet obtained results of much practical value in his attempts at procuring a prophylactic or curative serum for surra by attenuating the trypanosoma by means of cultures and by passing it through the bodies of animals other than equines. Neither has the treatment with arsenic and trypan-rot shown any efficient prophylactic or curative effect. The amount of work carried on at this lonely hill of Mukhtesar, away from their fellow men, reflects the greatest credit on the Imperial bacteriologist and his assistants.

Notable Scottish Trials Series. Vol. I., Madeleine Smith. Edited by DUNCAN SMITH, Advocate. Glasgow and Edinburgh: William Hodge and Co. 1905. Pp. 371. Price 5*s.*—The trial of Madeleine Smith, which commenced on June 30th, 1857, was one of the most remarkable criminal trials of the last century, both from the medical and the forensic point of view. The magnificent speech of the Dean of Faculty (John Inglis) for the defence was a masterpiece of pleading. The present edition is an almost verbatim account of the proceedings at the trial, the only omissions being certain passages in the letters which passed between Miss Smith and L'Angelier. The proof sheets of the medical and chemical evidence have been revised by Sir Henry Littlejohn and the editor has furnished an interesting introductory address. We look forward with interest to the forthcoming volumes, among which will be the trial of Pritchard.

JOURNALS AND MAGAZINES.

The Quarterly Journal of Microscopical Science. Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. With lithographic plates and engravings on wood. New Series, No. 193 (Vol. xlix., Part 1). London: J. and A. Churchill. October, 1905. Pp. 230. Price 10*s.*—In this, the first number of a new volume, an alteration is announced in the mode of publication; the Journal has hitherto been published quarterly but the editor has so large an accumulation of valuable material on his hands that he has determined to issue the parts at such intervals as may seem desirable rather than to delay the appearance of memoirs for a regular quarterly publication. The title remains unaltered, though more than four numbers may appear in the course of the year. Four numbers at 10*s.* each will still constitute a volume. The following are the contents of the present part. 1. Notes on the Structure and Development of the Elephant's Placenta, by Richard Assheton, M.A., and Thomas G. Stevens, M.D. Lond. It is indeed rare to obtain the placenta at full term of the elephant. Owen obtained and briefly described a specimen in 1857 but it probably belonged to a six months fœtus, and at that time no account was extant of the delivery or of the membrane of a full-term fœtus in India or Siam. Owen mentions that the placenta in this case was zonary and notices the presence of two other villous patches covering the ends of the oblong sac or chorion which he regarded as being also areas of attachment to the uterus. A portion of this specimen was placed after the lapse of 20 years in the hands of Sir W. Turner by Professor Flower. Sir W. Turner succeeded in passing some injection into the vessels of the chorion and the large trunks in the stem of the villi and concluded that in this specimen "a large amount of uterine mucosa was inextricably locked in between the fœtal villi." In 1880 Dr. H. C. Chapman published his observations on the birth of an elephant and the nature of the placenta; he concluded from them that in his specimen there was no allantoic cavity and that at least one-fourth of the deciduous girdle-like placenta of the elephant consists of hypertrophied mucous membrane. Mr. Assheton and Dr. Stevens's specimen agrees with that of Dr. Chapman in the absence of any allantoic cavity, the walls of the allantois having fused with those of the amnion. They find the chorion to present many branched villi containing numerous blood-vessels, the foliaceous villi being everywhere separated from the maternal

blood-vessels by a syncytial layer containing pigment and continuous with the epithelium covering the lobate terminations of the villi and presumably trophoblastic. By its long villi tending to remain imbedded in the uterine wall the placenta of the elephant resembles that of the Sirenia; by the villous patches at the poles and other points to the Ungulata vera of the Perissodactyl type; and by the invasion of the trophoblast—if such it be—by the maternal blood stream there is a resemblance to the Discoplacental type, though differing from the usual characters. The resemblance to the zonary placenta of the carnivora is on various grounds shown to be superficial. The memoir is illustrated by five plates with numerous figures. 2. The Development, Structure, and Morphology of the Scales in some Teleostean Fish, by H. W. Marett Tims, with a plate. This is a valuable complement to the account of the scales of fish in Günther's "Study of Fishes." 3. On the Propagation, Structure, and Classification of the family Sphæromidæ, by H. J. Hansen, Ph.D., F.M.L.S. The sphæromidæ are a family of isopoda, animals resembling the woodlouse. The number of forms seen by the author is very large. He states that 28 genera have been established by earlier authors, 25 of which he has himself examined, and he adds seven new genera. A plate is appended showing the parts of the mouth of this family. 4. The Descriptive Anatomy of the Brain and Cranial Nerves of Bdellostoma Dombeyi, by Julia Worthington of Cincinnati, Ohio, with four plates. The bdellostoma is one of the families of myxinida amongst the lowest of the fishes. It is a carefully worked-out paper and is excellently illustrated. 5. The Ontogenetic Stages represented by the Gastropod Protoconch, by H. Leighton Kesteven. In this article a new conchogenetic nomenclature is proposed, the terms being phyloconch, veloconch, nepioconch, and neanoconch. 6. The Development of the Corpus Luteum, a Review, by Francis H. A. Marshall, M.A. 7. The Lime-forming Layer of the Madreporarian Polyp, by Maria M. Ogilvie Gordon, D.Sc. 8. Pseudospora Volvocis (Cienkowski), by Muriel Robertson of Glasgow Zoological Laboratory, with a plate.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Nov. 10th, 1827.

Whenever the exuberance of fancy has assumed a prominence and distention, incompatible with the range of probability and the soundness of reason, it has merged on delusion, however picturesque and enchanting its visions may have appeared. Notwithstanding this luxuriance of fancy may be indispensable to the effusions of the orator, the vein of the poet, or the flights of the romancer, and they can only consist of verbal ornaments: it is the bane of sober demonstration and philosophic research; and therefore for the continuance of health, and for the remedy of disease, is justly expelled from every department of medical science. The scrutinising investigations of the anatomist, where the eye and hand mutually combine, to ascertain structure and position; investigations, from which the multitude turn aside with horror and disgust, and to which the medical pupil can only be reconciled by the love of science and the consciousness of duty: these loathsome and baneful labours owe no obligations to fancy. The researches of the physiologist, if they proceed on the basis of anatomy, and are pursued by accurate observation and correct experiment, will be uncontaminated by those hypotheses, that are derived from the indulgence of imagination. The art of surgery in its comprehensive signification, is throughout an example of the most delicate and erudite perceptions, maintained by self-possession, and directed by reason. To be less serious, if the language of metaphor were applied to the history of diseases, and to the practice of medicine, it would excite the utmost ridicule and contempt. We should read the cold narrative of an ague, and the sultry description of an ardent fever. The copper-coloured eruptions of secondary lues, would be termed the blushes of Venus, nor would the dignity of her crown be overlooked. Human existence would dribble away in diabetes, and the different cavities become deluged by dropsy. Too much of this figurative nosology still prevails: the claws of cancer continue to extend their ravages, and polypus maintains its footing: St. Vitus yet leads the dance of distortion. The ranula sustains the excessive temperature of the fauces, the placenta is not confined to the shop of the confectioner, and the high and low states of insanity adorn the pages of a Gulstonian lecture. Chemistry, now screwed up with mathematical precision, was once under the spell of this powerful enchanter, and in its older volumes we find that when silver was amalgamated with mercury, and this latter volatalized to obtain the residuum of the former, it was announced, "That the fair Luna melted in the embraces of the subtile and insinuating mercury; but when the torture of fire was applied, the inconstant deity flew away, and abandoned the credulous goddess to her own flame."[1]

[1] Excerpt from "Lectures on the Intellectual Composition of Man, *Delivered at the London Medical Society by* DR. HASLAM. Lecture IV. *On Reason and Imagination.*"

New Inventions.

AN IMPROVED SNARE FOR NOSE AND EAR.

THE accompanying illustration accurately represents a snare which I have had made for me. It possesses many advantages over others which I have used, and has performed its work so well that I wish to draw attention to it and I think it will be generally appreciated. It is light, strong, and easily manipulated, very simple, with no mechanism to get out of order. The snare, therefore, works noiselessly. The wire is exposed, the ordinary barrel being discarded, so that it is easily cleaned and does not rust. It is quickly threaded and the loop is easily reformed. It may be made single by having the top ring left off. Two sizes are made for nasal and aural polypi respectively.

It is made by Messrs. Mayer and Meltzer of 71, Great Portland-street, London, W.

GEORGE W. BADGEROW, M.B., M.R.C.S.Eng.,
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ROYAL DENTAL HOSPITAL OF LONDON.—The annual dinner of the staff and past and present students will be held on Saturday, Nov. 25th, at the Hôtel Métropole (Whitehall Rooms), under the presidency of Mr. Leonard Matheson. Gentlemen, either now or formerly connected with the hospital or medical school, who may through inadvertence not have received special notice and who desire to be present are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester-square, London. The medical committee will be "at home" to all old students of the hospital on the same day from 2.30 to 5 P.M., when the various departments of the hospital and school will be open, and specimens and cases of interest, &c., shown by the members of the staff and lecturers.

THE LANCET.

LONDON: SATURDAY, NOVEMBER 11, 1905.

Life in India and on the Gold Coast.

THE constantly increasing number of British subjects who find employment in India or in the colonies and the risks to health by which this employment is too frequently attended are such as to confer especial value upon all well-considered attempts to trace these risks to their sources and to point out the means by which they may be either minimised or removed. The Liverpool School of Tropical Medicine has just issued a highly important report by Lieutenant-Colonel GILES upon general sanitation and anti-malarial measures in Sekondi, the Goldfields, and Kumasi, to which is appended an elaborate comparison between the conditions of European residence in the Gold Coast and those existing in India, a comparison embracing the causes of disease, the climates in respect of temperature and humidity, the conditions of housing and of food-supply, the accessibility of health resorts, and the attitudes of the respective native populations with regard to sanitation. In many of these respects the differences are smaller and the advantages on the side of India are less conspicuous than many people would be inclined to suppose. It is well known, of course, that even in quite recent times the sickness and mortality among Europeans on the Gold Coast have been very considerable; and Colonel GILES places them before us from figures which show for the year 1901 a death-rate among officials of 80 per 1000 and an invaliding-rate of 95 per 1000. These figures were furnished by 188 persons of ages which in England would have presented a mortality not exceeding 9 per 1000 among all classes of the community, healthy and unhealthy, while the staff on the Gold Coast consisted of persons carefully selected by medical examination and drawn, almost without exception, from the ranks of the well-to-do. Coincidently with the commencement of effective precautions against malaria these figures show, even in the following year (1902), a marked diminution in the death-rate, which, among 286 officials, fell from 80 to 35 per 1000, while the invaliding-rate fell from 95 to 83·9. If the figures are so taken as to include all classes of the European population—mercantile, mining, and railway employés and missionaries—the death-rate per 1000 falls to 31·1, and an almost equally striking improvement is recorded for the following year in which the general European death-rate was only 21·7 per 1000 and the invaliding-rate 76·3. These are still greatly in excess of the corresponding rates for British India, and Colonel GILES declares the difference to be all the more striking inasmuch as it is not fair to compare Indian figures with the comparatively light African mortality of the last two years which displays the result of all such measures of anti-malarial sanitation as could be carried out without considerable capital expense. In India, for all practical purposes, the possibilities of anti-malarial sanitation have been absolutely ignored and both the native and the European populations are still destitute of the protection which such sanitation would supply. Even under this disadvantage the mortality of the Indian Covenanted Civil Service, for which alone trustworthy figures are available, did not exceed 11·3 per 1000 during the five years from 1899 to 1903 inclusive. A limited inquiry recently undertaken in the Bombay Presidency showed that out of a total European population of 18,804 (including soldiers) the death-rate in 1901 was 13·5 and the birth-rate 14·4; while in 1902 the birth-rate fell to 13·4 and the death-rate rose to 16·1.

We greatly doubt whether either of these sets of figures will afford any basis for a fair comparison. During the first half of the nineteenth century the sickness and mortality among British troops in India were appalling; and it was only after the Mutiny that reforms were introduced which have had the effect of producing the comparatively favourable conditions now existing. In India, therefore, we may witness the results of nearly half a century of general if imperfect sanitation with no precautions against malaria, and in Africa the results of two years of effective precautions against malaria, with no general sanitation. There is at least high probability that, when general sanitation is extended to Africa, and anti-malarial sanitation to India, the two countries may be placed much more nearly upon a level than they are at present. In the meanwhile Colonel GILES tells us that the causes of high mortality, as met with on the West Coast of Africa, differ entirely from those met with in India. In India the special causes that raise its mortality above that of England are typhoid fever, cholera, dysentery, abscess of the liver, and bubonic plague. Malaria is responsible for an enormous amount of sickness but is rarely directly fatal, although much of it is of a very virulent type. With regard to this enumeration we should be inclined to object that bubonic plague, however fatal among the natives, has not affected a sufficient number of Europeans to be entitled to take rank among causes seriously adding to their mortality. In Africa very little documentary information is attainable; but typhoid fever, cholera, and plague are said to be unknown upon the west coast, and dysentery and abscess of the liver to be uncommon. The ordinary cases of malaria are by no means serious, involving, as a rule, only a day or two of confinement to bed; and it is difficult to hear of any prevailing causes of death other than what is called "blackwater fever," or another equally inexplicable and rapidly fatal condition spoken of simply as "hyperpyrexia," both commonly included under malaria in hospital returns. Colonel GILES observes that if blackwater fever and hyperpyrexia are, as has been said, simply malignant forms of malaria, it is strange that they show no seasonal or other coincidence of prevalence in connexion with mosquitoes and that they are not met with either in India or in other countries in which malaria is an excessively common disease. It must, he thinks, be admitted that the malarial hypothesis fails to meet the circumstances of the case; and as the discovery of the true etiology and methods of prevention of these two forms of disease would at once solve the problem of the unhealthiness of the greater

part of Africa, it appears to him that a strong case has been made out for special investigation in connexion with them. The Liverpool School of Tropical Medicine can scarcely do otherwise than accept the gage thus thrown down by one of its own officers and we shall hope to see the inquiry for which he asks commenced as soon as the available resources will allow.

The report passes on to consider and to compare the respective temperatures and humidities of India and of West Africa, with the reservations rendered necessary by the magnitude of the respective territories and by the climatic ranges which they present, and then proceeds to describe, with praise or censure as the case may be, different modes of life and conditions of housing. Here, again, we think, the data necessary for fair comparison can scarcely be said to exist. The Anglo-Indian lives in the midst of a complex civilisation, of which some part at least has been specially adapted to his requirements by many successive generations of men; while the resident in West Africa is compelled to put up with makeshifts of various kinds. In nothing is the difference more apparent than in respect of food-supplies and of aerated drinks. The African habit of depending chiefly upon imported provisions, such as tinned meats, is strongly condemned, and Colonel GILES speaks of having "been regaled upon preserved tomatoes in a place where a small but delicious variety of that fruit grew wild within a few yards of the house." He points out that a great deal might be done to promote health and comfort by improving and utilising local products, by the introduction of gardens, and by the setting up of factories for ice and aerated waters and for the cold storage of imported meat. He has been agreeably surprised by the intelligence and efficiency of the African "boy" whom he describes as cheerful and willing and unhindered by caste prejudices from doing anything that may be required of him. But one of the chief dangers of West Africa, as compared with India, appears to depend upon the absence of facilities for necessary travel and of any equivalents for dâk bungalows. By reason of these deficiencies officers travelling on service are not only exposed to severe fatigue but are frequently compelled to sleep in native huts, from which the owners have been evicted for the night. A native hut in actual occupation always swarms with infected mosquitoes and it is difficult to understand how any care can preserve its temporary tenants from infection, apart from the consideration that the inconvenience to the native of having to surrender his house for the night cannot fail to render the visits of officers unpopular. The native African, Colonel GILES tells us, is far more cleanly in his person and dress than the Hindoo, insomuch that his vicinity is in no way unpleasant to Europeans; but this very circumstance has permitted of an approximation between the two races which is very dangerous as a means of malarial infection and it is highly important, in carrying out the inevitable great extension of such towns as Sekondi and Kumasi, to provide for complete separation between the native and the European quarters, such as, for other reasons, has always been enforced in India. With this condition fulfilled and with proper care that sanitary precautions should always attend or follow the spread of civilisation, it seems almost certain that before long the reproach of its former insalubrity will be removed from the Gold Coast and that the prodigious openings for enterprise which it affords will be rendered safely accessible to all Englishmen who may seek to utilise them. For the advantages thus conferred the country will be mainly indebted to the two great Schools of Tropical Medicine and very largely to Mr. CHAMBERLAIN, by whom the operations of those schools have been so greatly aided and facilitated.

The Remuneration of an Inspector of Midwives.

A CORRESPONDENT has asked us to express an opinion as to what should be a proper remuneration for a medical officer of health appointed by the local authority to act within its jurisdiction as inspector of midwives under the recent Act. In the locality to which the inquiry refers, a small urban district, there are four or five midwives registered and the normal birth-rate is about 250 per annum. Leaving the particular circumstances of the case for the present, it may be useful to consider what the duties of the inspector are likely to be in the light of the Midwives Act and of the rules made under it by the Central Midwives Board. Experience will be necessary in order to show to what extent supervision may have to be increased or to be diminished according to the discretion which general inspection necessarily implies, but at any rate it will have to be directed towards certain prescribed points. It will be observed also that the duties of the inspector divide themselves into two groups, those which are to be carried out from time to time in respect of all midwives, and those which only occur when illness requiring his attention is shown upon the midwives' records, or ought to have been so shown, or when charges of misconduct are made against her which have to be investigated and, if necessary, to be punished. The county and borough councils are assigned their duties, which they may delegate to district councils, by Section 8 of the Midwives Act which in substance provides as follows. Supervision is to be exercised in accordance with the rules to be made under the Act. Charges of malpractice, negligence, or misconduct are to be investigated and reported to the Central Midwives Board. Midwives are to be suspended when necessary in order to prevent the spread of infection. A report is to be made to the Board as to offences committed by midwives. Information is to be given to the Board such as will enable it to keep accurately the roll of midwives. Due notice of the effect of the Act is to be given to persons using the title of midwife at the time of its passing. This last provision has presumably been already carried out in most, if not in all, districts.

Turning to the rules made by the Central Midwives Board, we find that Part E relates to the "Regulating, supervising, and restricting within due limits the practice of midwives. The first five rules of this group contain provisions affecting the dress and equipment of the midwife as well as her conduct in disinfecting herself when necessary, and Rules 6 to 18 inclusive give her duties to her patient and to the child and her general duties. On reading Rule E 21 we find that under it "the supervising authority shal make arrangements to secure a proper inspection of every

midwife's case-book, bag of appliances, &c., and, when thought necessary, an inspection of her place of residence, and an investigation of her mode of practice." These inspections are clearly duties which the medical officer of health appointed to do so will have to perform with regard to all midwives, some of whom, it must be remembered, may not be specially trained women but may have been enrolled as having been in *bonâ-fide* practice before July 31st, 1902. The discretion allowed to him is a wide one, not rendered any less so by the introduction of the vague term "&c.," which presumably is to be interpreted in conjunction with rules and suggestions as to clothes, nail-trimming, and cleanliness, so as to include examination upon these points. The case-book is to be kept according to prescribed forms given in Rule E 19 (*a*) and (*b*), entries under (*a*) being made on all occasions and further under (*b*) whenever illness and other causes, of which examples are given, require that a medical man should be called in. If we read with Rule E 19 (*b*) Rules 17 and 18 we find that under Rule 17 in cases of "abortion, illness of the patient or child, or of any abnormality occurring during pregnancy," of which contingencies examples are given, a medical man is to be sent for. As everyone knows, this has given rise to many difficulties. The wording used is that in such circumstances "a midwife must decline to attend alone and must advise that a registered medical practitioner be sent for." She does not send for him herself; if she carries out the rule strictly she stands aside and awaits his arrival, but in such a case (under Rule 17 (*d*)) "when a registered medical practitioner is sent for the midwife must state in writing the condition of the patient and the reason of the necessity for medical advice." This is to be done in the form referred to as 19 (*b*) and of this notice three copies are to be made—one for the medical man called in, one for the midwife to retain, and one to be sent within 12 hours to the local supervising authority. She is also to inform the local supervising authority "as soon as possible" as to deaths and still-births. Of all these special cases, including cases of puerperal fever, the inspector will therefore have notice and it will be his duty to inquire into them and to see that so far as the midwife is concerned all proper steps have been taken, and are taken, in accordance with the Act and the rules.

The above passages appear to summarise more or less generally the duties to be performed and if we consider them with relation to such a case as that of our correspondent and take into consideration that any serious breach of the rules may lead to the removal of the offender from the register so that she will err no more, we find that, as has been suggested, his duties are likely to be heavier or lighter in accordance with the proportion of properly trained women among those practising. In the case of a medical officer of health, who presumably will have clerical assistance when needed, we should suggest that an annual sum of £5 for every midwife subject to his inspection should be sufficient to cover all normal work and special cases not involving serious trouble, with an additional fee not exceeding £5 to be allowed by the local authority where matters of gravity have been investigated, as, for example, when a case of alleged serious misconduct has been reported to the Central Midwives Board. Such a scale as this might be adopted tentatively with the understanding that it would be subject to revision after three years in the light of the experience gathered during that period.

The Notification of Pulmonary Tuberculosis.

IT is an undoubted fact that public interest in all matters dealing with pulmonary tuberculosis has immensely increased during recent years. This is as it should be, but there is a danger that the various data in reference to the prevention and the treatment of the disease, which are being so widely discussed by the laity, may lead to erroneous impressions being created; such an occurrence might well tend to hamper those whose province it is to administer the laws relating to public health. There are two aspects of the question which particularly attract the public mind—the curability of the disease and the proof of its infectivity. That pulmonary tuberculosis is curable in its early stages is now generally accepted, evidence in support of the statement being derived both from clinical and pathological experience. The methods to be adopted for its cure we do not propose to discuss now. The second point—that the disease is infectious—has taken a firm hold on the non-medical world and requires to be explained carefully, lest the unfortunate sufferers from the disease may be shunned and treated as though they were the subjects of a disease as infectious as, say, typhus fever. We have on several occasions referred to this matter but that exaggerated views are still prevalent is shown by the remarks of some of the speakers at a conference of the sanitary authorities in Hull and the East Riding of Yorkshire recently convened by the Hull corporation. Such assemblies are undoubtedly useful in order that the true state of affairs may be duly explained by members of the medical profession who may be present and at the same time that misunderstood statements may be corrected. At the conference referred to some of the speakers who were not medical practitioners uttered remarks which certainly required modification. For instance, one gentleman said that the disease (pulmonary tuberculosis), whether hereditary or not, was most infectious; he thought that fact could not be too greatly impressed upon the conference. It must, however, be thoroughly understood that although pulmonary tuberculosis is infectious, yet its infectivity is of a low order and is not to be compared with that of measles, of scarlet fever, of whooping-cough, or of the other specific fevers. It should be pointed out to the general public that two factors are required—the pathogenic bacillus and a suitable soil—and that the latter is as requisite as the former. Further, they should be instructed that if due precautions are taken in regard to the proper disposal of the sputum the risk of infection is reduced to a minimum.

In order to try to stamp out, or at least to keep under control, certain of the exanthemata, the very proper course has been taken of declaring them to be notifiable diseases. Notice of every case that is recognised must be sent to the sanitary authorities who have the power to adopt certain measures as to the isolation

of the patient and the disinfection of the dwelling. It is now proposed by the more ardent of those who consider the infectivity of pulmonary tuberculosis to be its chief etiological basis to adopt similar measures in regard to that disease. There are some who wish that the malady should be placed in the category of those diseases which fall under the penal clauses of the Public Health Act of 1875, whilst others take the more moderate view of advising "voluntary" notification. The arguments in favour of notification appear at first sight to be extremely strong. It is urged that the only way to combat pulmonary tuberculosis is that when an individual is recognised as being the subject of the disease the fact should be at once notified to the authorities, so that, according to some practitioners, he should be at once placed in surroundings in which he will no longer be a danger to his fellow creatures or, according to more moderate thinkers, that he should be duly educated in the course of life that he should lead. Further, that if death should occur then the same precautions should be taken as regards disinfection of the dwelling as are adopted in the case of other infectious diseases. The opponents of notification, however, advance weighty arguments against the proposed innovations, particularly during the patient's lifetime. After death from the disease such objections are not so strenuously pressed. It is pointed out that when once an individual has been notified as being affected with pulmonary tuberculosis if that notification is to be effectual he can no longer be regarded as a free agent. He must constantly be under the notice of the authorities; for instance, any change of address would immediately have to be given notice of; in other words, he would for a long period be a "marked man" and would certainly be under a sort of ban. The disastrous social consequences that might ensue, more particularly amongst certain classes of society, may well be imagined. The head of a large business establishment might logically say that he cannot keep in his employment any individual who is the subject of a disease which is so infectious that it has to be "notified." It is true that notification would necessarily come under the rule of professional secrecy and therefore that the diagnosis would not leak out through that channel, but it would be impossible to convince a large section of the public that although it was thought necessary to notify a disease its infectivity was not of a high order. A further objection raised is that if notification were enforced by law, or were even made voluntary, this fact would deter patients who were afraid that they were afflicted with pulmonary tuberculosis from seeking medical advice. Those who have hospital experience in these matters know that the majority of the patients suffering from the disease do not come under observation until an advanced stage has been reached. A working man dates his illness from the time when he has had to give up work, not from the date of the appearance of the symptoms. Yet for months he may have been expectorating tubercle bacilli. Therefore it is asked, Can the relatively small numbers that will be notified under the voluntary system make any substantial difference in the spread of the disease?

We have simply stated a few of the arguments which have been brought forward by the proposers and the opponents of notification of pulmonary tuberculosis. Several of the sanitary authorities throughout this country are making trial of voluntary notification. The reports as to the success of this procedure vary, some claiming satisfactory results and others condemning it as a failure, mainly owing to the reluctance on the part of the patient to have the nature of his malady made known to the authorities. Further experience is certainly necessary before voluntary notification can become general. In the meantime we may again express our conviction that it is incumbent on every practitioner to impress upon those of his patients who are the subjects of pulmonary tuberculosis that the disease is an infectious one and that without due precautions they are a danger to the community. The method of collection and disposal of the sputum should be minutely explained to them. The use of the handkerchief and its proper disinfection should also be pointed out. Other details of life, such as occupying a separate bed, the risks of kissing, and the setting aside of certain eating and drinking utensils, should be duly insisted on. These and similar instructions will go far in reducing the risk of infection when dealing with private cases and the practitioner himself can see that his injunctions are obeyed. With hospital out-patients the case is more difficult. The system of dispensaries now being gradually established in France in connexion with which committees are formed, the members of which actually visit the patients in their own homes, is a step in the right direction. The question of notification presents great difficulties but until some definite procedure is adopted the course to be followed by individual members of the medical profession is clear and responsible.

Annotations.

"Ne quid nimis."

THE BIRTHDAY HONOURS.

THE list of Birthday Honours contains the names of seven medical men upon whom His Majesty has been pleased to confer distinction—namely, Dr. James Barr, Mr. Arthur Chance, Dr. John McFadyean, Dr. Theodore Thomson, Dr. Marc Armand Ruffer, Dr. Featherston Cargill, and Sir Felix Semon. To these gentlemen we offer our hearty congratulations in the name of the medical profession. Among those who have received the honour of knighthood Dr. Barr is a well-known medical man in Liverpool and is one of the physicians to the Royal Infirmary of that city. He was for some years medical officer to Kirkdale prison and has written much upon medical subjects, especially upon typhoid fever. Mr. Arthur Chance is the President of the Royal College of Surgeons in Ireland, is surgeon to the Mater Misericordiæ Hospital, Dublin, and the Dublin Orthopædic Hospital, and consulting surgeon to the St. Michael's Hospital. He is President of the Surgical Section of the Royal Academy of Medicine of Ireland and was formerly surgeon-in-ordinary to the Lord Lieutenant. Dr John McFadyean is the Principal of the Royal Veterinary College at Camden Town. Among the Commanders of the Order of St. Michael and St. George are Dr. Cargill, who is First Class Resident of the Protectorate of Northern Nigeria; Dr. Thomson of the Local Government Board, who has received his distinction "for services in connexion with sanitary matters under the Foreign and Colonial Offices"; and

Dr. Ruffer, President of the Egyptian Sanitary Board, who is well known for his sanitary work in Egypt and for his researches into various pathological questions. Sir Felix Semon, Physician-Extraordinary to His Majesty, has been promoted from the Commandership of the Royal Victorian Order to the Knight Commandership. Among those who have been honoured outside the medical profession we may mention the names of Professor G. H. Darwin, who has been made a Knight Commander of the Bath. Professor Darwin is the president of the British Association, at the meeting of which society in South Africa this year he delivered a remarkable presidential address. He took for his subject that which will be for ever connected with the name of his illustrious father as well as his own—namely, evolution. He is professor of astronomy at the University of Cambridge and among his best known work in this subject is his theory of Tidal Evolution.

THE PUBLICATIONS OF THE UNIVERSITY OF LONDON.

WE have received from the authorities of the University of London copies of 21 books and pamphlets constituting the Calendar of the University for the year 1905–06. The Calendar is published in three separate volumes.[1] The first volume contains an almanac giving the dates of the various examinations and deals chiefly with the constitution of the University. There is a very readable, although brief, history of the University and its work which we can strongly recommend all graduates, students, and others interested in the future of the University to read. We are told that London was one of the latest of the great capitals of Europe to provide itself with a local university and the gradual evolution of the present institution forms an engrossing story, of which not the least interesting part is the record of its present endeavour to become a teaching as well as an examining body, and thus to co-ordinate and to control the higher education in this great city. The University of London Act, 1898, is given in its entirety, together with the statutes, regulations, and report made in accordance with that Act by the Davey Commission in 1900. The remainder of this volume is chiefly occupied by lists of the officials of the University, including the Senate, the faculties and boards of studies, and the examiners, and of the graduates in the various faculties. There are also honours lists and the names of all internal students of the University are classified under their respective colleges and schools. The "Brown" Animal Sanitary Institution is also described and its history is recorded. The regulations for the matriculation examination are given in the form of an appendix. The second volume of the Calendar is published chiefly for internal students and comprises details of scholarships, exhibitions, studentships, and prizes, a register of recognised teachers, with rules for their recognition, descriptions of the various schools and colleges of the University, curricula and regulations for internal students, with the prescribed courses of study in the various faculties. There is also a section dealing with the work of the board to promote the extension of university teaching as well as an appendix on the regulations for the selection of University of London candidates for commissions in the army. The third and smallest volume of the Calendar is devoted to the regulations for external students, with particulars of colonial and provincial examinations, and of scholarships and prizes. The regulations and syllabuses for each of the eight faculties together with the dates of examination are also given. For the convenience of students the information contained in the Calendar is published separately in a series of 18 pamphlets called Calendar pamphlets. The first of these deals with the constitution and officers of the University. Two separate pamphlets are issued for internal and external students of each of the eight faculties—namely, theology, arts (including pedagogy), laws, music, medicine, science (including agriculture and veterinary science), engineering (including mining and metallurgy), and economics. There is a distinct colour for each faculty and each pamphlet includes the examination papers of the previous year. The price of each of these pamphlets is 1*s*. A separate one, price 6*d*., is published for the matriculation examination. Application for these publications should be addressed to the financial secretary. The University also publishes a gazette of which the issue for the current year will constitute the fifth volume. This gazette publishes the Acts of the Senate, the proceedings of Convocation, and general news concerning the University and its work. We congratulate the University upon its endeavour to keep its large constituency posted in its doings. With the extended field afforded by its new constitution its work and the necessary regulations have been rendered more complicated, but the publication of the faculty pamphlets greatly simplifies the task of the student in studying the regulations and should materially assist in extending the work of the institution.

[1] Vols. i. and ii., price 5*s*. each; vol. iii., 2*s*. 6*d*.

WHAT IS WHISKY?

PROCEEDINGS under the Sale of Food and Drugs Acts were commenced at the North London police court on Monday against a publican and a wine merchant respectively for selling spirits alleged to be described wrongly as "Irish" and "Scotch" whisky. As a matter of fact there were 11 summonses on the list but it was decided to take two as typical of the rest. The Islington borough authorities undertook the prosecution and the case was opened by their solicitor, while Mr. Fletcher Moulton, K.C., appeared for the defendants. It may be remembered that a little over a year ago the Islington borough council instituted similar proceedings in regard to brandy which resulted in a conviction being obtained. The evidence in the present case, as in the previous one, is based upon the results of analysis furnished by the borough analyst and the charge is that the defendant in one instance sold to the agent of the council "to the prejudice of the purchaser a certain article of food (to wit, an alcoholic liquid) which was not of the nature, substance, and quality of the article (to wit, Irish whisky) demanded by the purchaser, the said article so sold containing a large percentage of patent still (otherwise silent or neutral) spirit not whisky, contrary to the spirit of the Sale of Food and Drugs Act of 1878 and 1899." The charge against the other defendant is in similar terms, the word "Scotch" being substituted for Irish. In opening the case the solicitor for the Islington authorities said that it was the fact, though it might be unnecessary to say it, that it was no offence against the law to sell patent-still spirit if it were offered to the public under the right name, and what he complained of was that the defendants were selling a thing and calling it that which it was not; the spirit was sold as Scotch or Irish whisky, whereas he conterded it was nothing of the kind. He then described the methods of production of Scotch and Irish whisky, using for illustration models of a pot-still and a patent still. He asked Mr. Moulton to shorten the case by telling them what the spirit which had been sold by his client really was, to which Mr. Moulton answered, "It is whisky from the patent still." The certificate of the analyst showed that the "Irish whisky" contained 174·5 parts of secondary products per 100,000 parts of absolute alcohol present and the "Scotch whisky" 110·5 parts per 100,000 of alcohol. The analyst fixed as the

result of his examination of a great number of genuine pot-still whiskies the minimum coefficient of secondary products at 380 parts per 100,000 parts of absolute alcohol. As our readers know, we have taken a very practical interest in this question and it is our intention to follow the proceedings in this important case somewhat closely. A very great principle, in our opinion, is at stake and the Islington authorities may be congratulated upon their determination to test a very important question in the light of the law. It will be interesting to learn the opinion of the magistrate (Mr. Fordham, who decided the brandy case) as to what is and what is not entitled to be called whisky. Upon the bearings of this case we must, of course, refrain for the present from saying anything and it is probable that the proceedings will occupy the attention of the court for some time. The representatives of the spirit trade are naturally taking an intense interest in the case, as was shown by the court being crowded with persons connected with the various branches of the industry.

INSTRUCTION IN PUBLIC ELEMENTARY SCHOOLS.

THE Board of Education has issued an interesting blue-book of 155 pages, entitled "Suggestions for the Consideration of Teachers and others concerned in the Work of Public Elementary Schools." In a prefatory memorandum the Board emphasises the tentative character of the work and invites well-considered criticism with a view to increase the usefulness of the suggestions made. It further announces its intention of instituting searching tests in the hope that during the next few years it may be able to issue some general outlines of approved methods for adoption in public elementary schools and it strongly recommends local education authorities to give opportunities for experimental work in teaching at selected schools within their districts. The book itself forms a carefully considered and thoughtfully written exposition of the scientific principles upon which elementary instruction should be based and the practical application of these principles by simple methods, so as to appeal to the intelligence and to educate the senses and mind of the scholar. It is pointed out that, in addition to the development of the faculties of the child, the cultivation of taste, the formation of character, and the evolution of moral training and discipline all come within the purview of the teacher. Again, the importance of lessons in observation and the study of nature and their value in the education of the senses are very strongly emphasised. The greater part of the book is devoted to discussion and exposition of the teaching of the various subjects in the ordinary curriculum, such as English, arithmetic, history, geography, singing, housecraft, and handicraft. In addition, there are included certain subjects which have a distinctly medical aspect, for example, a chapter on physical training and another on the school and the health of the scholars, while in the appendix there is an outline scheme for teaching hygiene and temperance. With regard to the subject of physical training, the Board, in conjunction with the Scotch Education Department, has issued a syllabus of graduated exercises and it believes that it will be accepted as an advance on any hitherto in use, so that although it does not insist on its adoption it is anxious that schemes at present in operation should, as far as possible, be brought into line with it. There can be no difference of opinion that moderate muscular exercise at intervals during school hours, serving as a relaxation from the strain of attention involved in intellectual exercises, can only be of benefit to the children if used with due discrimination, especially in reference to the age and physical state of the individual scholars. The same care requires to be exercised in the organised games which the Board rightly regards as of great value. The recommendations brought forward in this book afford a very striking indication of the advances which have been made in regard to the methods of education and show that it is now recognised that even the most elementary instruction demands careful study on the part of the teacher. Indeed, the carefully worked out schemes for teaching afford an almost bewildering contrast to the haphazard instruction of a previous generation. We are glad to see that the important hygienic problems involved in school life have received due consideration. Building regulations are enforced for new schools to insure that they are properly adapted to the needs of the scholars The importance of ventilation is insisted on; it is recommended that the children should leave the school-room at least once during each school meeting and during their absence that it should be thoroughly flushed with fresh air; while it is also recommended that the temperature of the room should be maintained at 60° F. as nearly as possible. Long parallel desks and deskless galleries are condemned, as are also slates for writing purposes. The teacher is directed to see that the posture of the child at his desk is a natural and suitable one. Habits of personal cleanliness are to be inculcated and enforced. Some general hints are included as to the signs of poor health, of mental defect, of epilepsy, and of infectious diseases, and the importance of drawing the attention of the medical officers to these cases is pointed out. Cases presenting any features suggesting infectious disease are to be sent home or referred for medical advice The appendix giving an outline scheme for teaching hygiene and temperance is also of great importance. We are glad to see that the Board has adopted the views publicly expressed by medical men in regard to this matter to which we have already referred in a leading article[1] dealing with a memorandum published by the Board. In the present scheme the Board recommends that "the rules of health impressed upon the children should be few and direct and as little as possible encumbered with technicalities or quasi-scientific expositions." It suggests that elementary instruction may be given in connexion with the following subjects: the home, the person, eating and drinking, and minor ailments. In this we can readily concur and in its syllabus published for this object the suggestions offered seem to us to be rational and satisfactory and free from the objections urged against the previous memorandum.

THE ETIOLOGY AND TREATMENT OF ANÆMIA.

WE have received a communication from Dr. J. S. Wallian of New York referring to recent advances in the etiology and treatment of anæmia. Many of the points mentioned by him are of considerable interest but some of them can scarcely be called "recent" advances as they have been taught in the English schools for some years. Dr. Wallian considers that the word anæmia as generally used is misleading. He maintains that the condition which puzzles the pathologist and calls for the nicest discrimination in its management is much more accurately expressed by the word dyshæmia. In all anæmic conditions the vital loss consists principally of the albuminoids and hæmoglobin. Since both of these constituents belong to the group of nucleo-proteids both must be supplied in liberal quantity and available form in order to maintain a normal constitution of the blood or to recover such a condition when it has been lost. Dr. Wallian points out that the antiquated assumption that because some form of a ferric salt is an essential constituent of the hæmoglobin an indiscriminate resort to almost any form of chalybeate will restore the patient is no longer accepted. This much is clear, however, that hæmoglobin is a nucleo-proteid and that iron to the extent of 0·42 per cent. (of the dried product) is one of its normal and

[1] THE LANCET, April 8th, 1905, p. 939.

essential constituents. As the processes of life and the constant metabolism of the tissues constantly exhaust these elements the last named must be as constantly supplied or the organism suffers a decline. Of the dried solids of the red corpuscles 8 per cent. are proteids and 90 per cent. hæmoglobin. Dr. Wallian rightly remarks that it has been contended, and is now admitted by at least a majority of recognised authorities on physiology, that inorganic iron salts are at best sparingly absorbed by, and utilised in, the system and that when not so utilised they can only act the part of irritant foreign bodies within the alimentary tract. He quotes Dr. J. E. Winters of New York, who maintains that minerals to be assimilated must be in combination with proteids. Careful analyses show that the most trustworthy and available source of iron-bearing products is found in vegetable foodstuffs, especially in the legumes, lentils, spinach, and so on. Dr. Wallian maintains that it is incumbent on the "present-day physiological expert and the advanced pharmaceutical chemist to determine the readiest resource from which to procure, and the most reliable technic by which to prepare, these necessary food constituents so as to make them at once most available, acceptable and assimilable in form," and concludes by saying that an abundance of fresh air and good food is essential to success in the treatment of anæmia and that every attention must be given to the matter of hygienic environment.

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

ON Nov. 6th Mr. John Troutbeck held an inquest upon the body of John Waple. The deceased's son said that his father had been ailing for some time and that on Wednesday, Nov. 1st, he got very much worse. They sent for a medical man who came at once and said that the patient was dying. He made a short examination and the patient died about 20 minutes later. A medical man deposed to being called to the patient. In answer to the coroner he said that he noted some bronchitis but the man was dying when he arrived. He did not give a certificate because he was unable to state the cause of death. He had also refused to give the coroner's officer any information but he had no intention of forcing an inquest on account of fees. Dr. L. Freyberger said that death was due to double pneumonia and that there was no need for an inquest. The coroner said that the inquest had been forced upon him simply to ventilate a grievance and the jury censured the medical man called to the patient for wasting the public time when the coroner is reported to have added, "Yes, and the public money." An inquiry is being held at this very time into Mr. Troutbeck's behaviour in paying a large sum of public money to Dr. Freyberger in the shape of unnecessary fees, or illegal fees, which would naturally call Mr. Troutbeck's attention to the necessity of public economy. Mr. Troutbeck is alleged to have paid Dr. Freyberger certain irregular fees, and now that this allegation has been made public by the spirited action of the British Medical Association the ratepayers may be trusted to look closely into the coroner's disbursements. In our opinion the medical man was perfectly right to refuse to give medical evidence to the coroner's officer. Medical evidence has to be given in court by a medical man, not retailed in conversation to an uneducated layman—that has always been the contention of THE LANCET. The medical man was equally right not to give a medical certificate if he was unable to state the cause of death. Dr. Freyberger's opinion that an inquest was unnecessary was of no value whatever and should not have been allowed to influence the jury. Not having been in attendance on the patient, and not having been present at the death, he could not possibly know what difficulties there might be in making the diagnosis. What appears to us to have been unnecessary was Dr. Freyberger's presence.

MEDICAL MATTERS IN HAVANA.

THE *Revista de Medicina y Cirugia* of Havana publishes as an extra number, on the tenth anniversary of its commencement, a handsomely printed and profusely illustrated account of medical matters in Havana. One of the most interesting subjects dealt with is a description of Las Animas Hospital for Infectious Diseases, the institution which has borne a principal part in the work of abolishing yellow fever from the locality where in former years it was endemic. As there is now no yellow fever in Havana the hospital accommodates cases landed by vessels coming from Mexico and other countries. The greatest care is taken both during the conveyance of the cases to the hospital and in the wards to prevent the access of mosquitoes, so that there may be no danger of the inhabitants of the town being infected by mosquito-borne virus from the imported patients. The department of public health has organised a special section for dealing with mosquitoes. A detailed account is given of the vaccine department which sometimes has suddenly to meet an order from the immigration office or from some other public body for lymph for 1500 vaccinations. Consequently, the department constantly keeps in hand sufficient lymph for 4000 or 5000 persons.

TOXICOLOGICAL EXAMINATION FOR MORPHINE.

A RESEARCH has been conducted by M. E. Gérard, M. Deléarde, and M. Ricquet in the laboratory of pharmacy and pharmacology of the Faculty of Medicine at Lille with a view of rendering more easy the task of finding morphine in toxicological examinations. An account of this research was given in the *Journal de Pharmacie et de Chemie* of July 16th. After summarising the results of previous workers the investigators describe the process which they have adopted. The organs are reduced to a pulp and an equal weight of water is added, together with hydrochloric acid in the proportion of a tenth of the total weight of the mixture. In operating on urine the same proportion of acid is added. The whole is then digested on a water bath for two hours and afterwards supersaturated with ammonia and agitated with two or three successive portions of amylic alcohol, which are set aside. The aqueous mixture is evaporated; the residue is ground with sand and then extracted with ammoniacal amylic alcohol. The mixed amylic alcohol solutions are then shaken with hydrochloric acid and the acid solution in its turn is further shaken with fresh portions of amylic alcohol and ammonia. The amylic alcohol is then distilled off and the residue is examined on a porcelain dish for morphine and for oxymorphine by the Marquis reagent, which consists of a mixture of 30 cubic centimetres of concentrated sulphuric acid and 20 drops of formaldehyde.[1] Distinct colour reactions are obtained—with morphine a very deep violet red colour and with oxymorphine a beautiful bright green tint. If sufficient residue is obtained the alkaloids may further be converted into sulphates, when they may be distinguished by the fact that oxymorphine sulphate is almost insoluble in cold water. This process has enabled M. Gérard, M. Deléarde, and M. Ricquet to discover the presence of morphine and a little oxymorphine in the organs of a rabbit which was killed six hours after the hypodermic injection of one centigramme of morphine hydrochloride. The omission from this process of a preliminary hydrolysis with hydrochloric acid, or the substitution of ether for amylic alcohol gave

[1] Pharmaceutische Centralhalle, Band 37, 1896, p. 844.

absolutely negative results. These are the essential parts of the process. Hydrolysis with hydrochloric acid appears to be necessary to decompose a sulphonated morphine derivative which is elaborated in the system. The choice of amylic alcohol as a solvent for morphine is in accord with the best results of experienced English toxicologists. Details are given of four experiments with rabbits. An interesting portion of the research deals with the resistance of morphine to decomposition in cases of putrefaction of a body. A dog was dosed hypodermically with 0·9 gramme of morphine hydrochloride in two days. The body was allowed to decompose during two months, after which the employment of the above process revealed the presence of morphine and a little oxymorphine in the liver and kidneys, and of oxymorphine and a little morphine in the urine found in the bladder at the necropsy.

CANCER RESEARCH AT MANCHESTER.

THE trustees of the Pilkington Cancer Research Fund are about to appoint a graduate in medicine or other qualified person to carry out a research in this subject and invite applications for the post. The appointment will be for one year but may be renewed for a further period of one or two years and the holder of the post will receive an income of £300 per annum with a grant for laboratory expenses. Applications, stating experience of research in biology and medicine, and giving the name of the professor or head of a laboratory to whom reference may be made, should be forwarded to Professor G. A. Wright at the Victoria University of Manchester, from whom further information as to the conditions of the appointment may be obtained. It may be explained, however, that candidates must be prepared to give their whole time to research into the cause, prevention, and cure of cancer.

NOTIFICATION OF INFECTIOUS DISEASES BY HOUSEHOLDERS.

MISUNDERSTANDINGS and difficulties with regard to notification of infectious disease are happily now less frequent than in the years which followed the passing of the first Act on the subject. For ordinary purposes the respective positions of local sanitary authorities, medical officers of health, medical practitioners, and householders in regard to notification have become settled on well-recognised lines. This is the case, for example, regarding the dual system of notification prescribed by the Act. The universal practice is for the sanitary authority to recognise that notification by the medical practitioner absolves the householder from himself notifying the existence of infectious disease in his house. In case of neglect to notify the sanitary authority takes action against the householder only when no medical advice has been obtained. We do not think that a local authority should depart from this custom without some very special reason. A handbill which has lately been distributed from house to house in the Caistor rural district in consequence of the prevalence of scarlet fever, calls upon the householder immediately to give notice to the medical officer of health of the district of any case of infectious disease "whether he employs his private medical man or not," and the notice goes on to state the fine which may be imposed for non-compliance with this demand. Now if the reason for this handbill is that some medical men in the district are believed to be dilatory in notifying, the sanitary authority has its remedy against them. But if this be the reason there seems no advantage in giving quite unnecessary trouble to every householder who has a case of infectious disease in his house and obtains medical advice in the ordinary way. As a practical matter the demand is sure to be disregarded. Moreover, the notice of the sanitary authority may cause the position of the medical officer of health, if he is also in general practice, to be misinterpreted. We think that this notice should be withdrawn and redrafted.

POST-GRADUATE STUDY IN LONDON.

IN spite of the excellent work which is being done by the London Post-Graduate Association, the Medical Graduate College and Polyclinic, the West London Post-Graduate College, and the North-East London Post-Graduate College, it must be confessed that the facilities for post-graduate study offered by London are far short of the requirements and that London with its unique field for clinical work is in this respect distinctly behind Vienna, New York, and Philadelphia, not to name other cities. We are therefore glad to learn that an important addition to the list of post-graduate nstitutions will shortly be made. In 1889 the Seamen's Hospital Society successfully instituted in connexion with its branch hospital at the Royal Albert Dock the London School of Tropical Medicine for the training of students for work in the tropics. The society now proposes to utilise its *Dreadnought* Hospital at Greenwich for the purposes of a London School of Clinical Medicine (as it is proposed to term it) for ordinary post-graduate study. This hospital, containing as it does 250 beds and fed by a large dispensary in the East India Dock-road, offers good opportunities for clinical work, particularly as it possesses special wards for venereal diseases and for tuberculosis and has facilities for teaching operative surgery not elsewhere obtainable, which have long been known and recognised. Moreover, the recent resignation of the principal medical officer, Mr. W. Johnson Smith, has rendered a suite of rooms available for conversion into laboratories, museum, library, lecture rooms, and so on. By the development of its out-patient and special departments, by the addition to the present staff of teachers of recognised standing and ability, and possibly by an affiliation for teaching purposes with other special hospitals south of the Thames, the school will be able to provide exceptional opportunities for study in all branches of medical science and art. The sister institutions at the Albert Dock and at Greenwich will be complemental and it cannot be doubted will be mutually helpful one to the other. The Seamen's Hospital Society, in thus founding educational institutions, has avoided the possibility of its schools becoming a burden on the charity by exacting guarantees that these shall not only be self-supporting but that a proportion of any profits shall be allocated to the charity.

THE PHARMACOLOGICAL ACTION OF BENZENE AND ITS DERIVATIVES.

M. Chassevant and M. Garnier have made in the *Journal de Pharmacie et de Chemie* of July 16th an important contribution to our knowledge of the pharmacological action of members of the benzene series. The physiological action of benzene is exerted chiefly on the nervous system and causes convulsions, loss of muscular power (*hypotonie*), and above all a lowering of temperature (*hypothermie*). These effects are increased by the substitution of one or two hydroxyl radicles (a fact which has been observed by previous workers) or by the simultaneous substitution in the same molecule of a hydroxyl radicle and a hydrocarbon radicle. On the other hand, these undesirable effects are suppressed by the substitution of hydrocarbon radicles, or of a carboxyl radicle, or by the simultaneous substitution of a hydroxyl and a carboxyl radicle. The toxicity of benzene undergoes, by the substitution of one or more of the radicles studied, changes which depend on the nature of the substituted radicle, and vary with its molecular weight and with the number and position of these substitutes. From a therapeutic point of view preference

should be given to poly-substituted derivatives and those compounds should be rejected in which the action of the toxic radicles (OH) and (CH_3) is not counterbalanced by that of the mitigating radicle (COOH). It would seem desirable, therefore, acting on these views, to use carefully for therapeutic purposes such toxic derivatives as the cresols, carbolic acid and resorcin, owing to the (OH) groups which they contain. On the other hand, benzoic acid would appear to be a safe remedy owing to the (COOH) group in the molecule. As an example of a compound containing a toxic group (OH) and a non-toxic group (COOH) salicylic acid may be mentioned. It is most desirable that our knowledge of the relation between the chemical constitution and physiological action of these and similar drugs should be thoroughly understood owing to their widespread use in medicine and in surgery.

THE medical officer of health of Cape Colony states that for the week ending Oct. 14th the condition of the colony as regards plague was as follows. No case of plague in man occurred throughout the colony and only at Port Elizabeth were any plague-infected rodents found—namely, 11 rats and 2 mice. As regards the Mauritius, a telegram from the Governor received at the Colonial Office on Nov. 3rd states that for the week ending Nov. 2nd there were 12 cases of plague and 9 deaths from the disease. As regards Hong-Kong a telegram from the Governor received at the Colonial Office on Nov. 6th states that for the week ending Nov. 4th there were 2 cases of plague and 1 death from the disease.

A LECTURE illustrated by lantern and microscopes, on the Sources and Channels of Disease, will be delivered before the Polytechnic Health Society, London, on Nov. 11th, by Professor Allan Macfadyen, M.D. Edin. The chair will be taken by Dr. A. Eichholz. The honorary secretary of the society is Mr. A. T. Burgess, 16, King's-road, Peckham, S.E.

THE inaugural meeting of the British Science Guild, to which we alluded last week, has had the effect of largely increasing the list of applications for membership. Sir Norman Lockyer desires it to be known that would-be members should apply for particulars to the honorary secretary, 16, Pen-y-Wern-road, London, S.W.

THE secretary of the Incorporated Society of Medical Officers of Health is calling attention to the fact that the present address of the society is 1, Upper Montague-street, Russell-square, W.C., where the next meeting will be held on Friday, Nov. 10th.

THE next session of the General Medical Council will begin at 2 o'clock P.M., on Tuesday, Nov. 28th, at the office of the Council, 299, Oxford-street, London, W., the President, Dr. Donald MacAlister, being in the chair.

MEDICINE AND THE LAW.

Past Mental Disease and Criminal Responsibility.

THE law presumes that a man is sane and also that a lunatic will return to sanity; it, however, provides means of rebutting these presumptions with the Lunacy Act, 1890. Further, lawyers have an apparently ineradicable belief in the doctrine of "lucid intervals" and in their old formula a man of reputed insanity may act *dum gaudeat lucidis intervallis*. These points were lately tested in the Supreme Court of Georgia in the case Allams *v.* The State. A prisoner accused of murder pleaded as his defence that he was suffering from insanity at the time that he committed the homicide and for some time previously. In the judgment it was stated that if the accused was proved to have been insane prior to the date of the homicide the presumption is that he so remains, "and the burden of proof would be in the State to show to the reasonable satisfaction of the jury by a preponderance of the evidence that at the time of the alleged homicide the defendant was of sound memory and discretion." If this argument from his previous history failed the court directed that the defendant must show "that at the time of the killing he was not of sound memory and discretion; he must show this not beyond a reasonable doubt, but to the reasonable satisfaction of the jury, by a preponderance of the evidence." It has been said similarly in the English courts that the object of the law is not to decide the question, Does sanity exist? but, Can insanity be proved to exist?

THE QUESTION OF FOOTBALL.

INTEREST in football waxes rather than wanes in Great Britain and the same may be said of the game in our colonies and in the United States. To the medical profession the game will always be of interest as long as it remains the most popular form of athletic amusement among our young men, and for this very reason we shall be slow to see any objections to its pursuit, although at intervals an outcry is raised that the game is dangerous and that in many respects it is prejudicial to health. Recently, in the United States indignation has been expressed in several quarters against the manner in which football is played in that country on account of the numerous casualties resulting therefrom. A communication dealing with the matter from Dr. Charles W. Eliot appeared recently in a London newspaper—the *Westminster Gazette* of Oct. 28th. Dr. Eliot, who is president of Harvard University, utters an eloquent protest against the methods employed in college football in the United States, which may well be considered while discussing the football situation from the standpoint of danger in this country.

In THE LANCET of March 24th, 1894, there was an article entitled "The Perils of Football," which treated the subject thoroughly. So far as the perils of football are concerned, change has taken place since the year 1894 and although the general conclusions drawn in the article referred to will still be applicable the number of severe accidents has grown less. Football, as played in England, is a dangerous game to a certain extent but the powers of the referees are very strong, and for this reason or that there seem to be fewer accidents than formerly. The existing craze for watching the game and for betting upon the result may not be altogether healthy signs; this, however, is a matter upon which we do not propose to dwell now but we will rather consider the question from the point of view of danger. More than ten years ago THE LANCET showed that accidents of a serious nature occurred with comparative frequency upon the football field but that, taking into consideration the very large number of individuals who took part in the game, this number was by no means excessive. Fractures of the leg were by far the most frequent injuries followed by fractures of the collar-bone. Concussion of the brain was a not uncommon accident, while injuries to the spine and to the body of a grave nature occurred occasionally. Of course some alterations in the manner of playing and in the rules of the game have taken place during the last decade but none so radical as to change to any appreciable extent the main characteristics of either Rugby Union or of Association football. Opinions still differ as to the relative degree of risk incurred by those participating in Rugby Union and Association football, but THE LANCET demonstrated that at the Association game more serious injuries were received than at the Rugby Union game, and there is no reason to suppose that this view does not still hold good. Association football now attracts a much larger following than does the sister game. In the early days of "Association" accidents of a serious character were few and far between. The cause of this comparative immunity from injury was mainly owing to the manner in which the game was then played. Combination was unknown. Collisions were not numerous and the chief factor in the success of a side was individual effort. With the introduction, however, of a more scientific style of play, marked by greater pace and accurate and quick passing, collisions while travelling at a rapid speed became frequent, the result being that accidents increased rapidly in number and sadly in

severity. In Rugby Union football "collaring" is the cause of the majority of the accidents and the fracture of the collar-bone is the class of injury that most prevails. Minor injuries may be frequent at Rugby Union games, but serious accidents, judging from statistics, are somewhat rare.

If in England little or no modification of the methods of playing football is required, from all accounts similar remarks do not apply to football in the United States, where the injuries received at college football increase year by year. The principal medical journals of the United States have for some years published editorial articles in which the brutality of American football has been strongly condemned. So far these protests have been of no avail, but it would seem now that with the intervention of President Roosevelt in the matter a long step towards the introduction of reforms has been taken. The *Journal of the American Medical Association* in its issue of Oct. 21st states that it has been announced recently that the President has succeeded in effecting an arrangement between the football captains and coaches of the more important eastern universities with the object of the elimination of brutality from the game. Dr. Eliot of Harvard University, in his communication to the *Westminster Gazette*, discusses the evils of football in the United States at some length. The venerable head of the largest American university knows whereof he speaks and describes the ferocious tactics pursued at a college game with convincing wealth of detail. For instance, he states that the uniform enforcement of the established and recognised rules is impossible and that in consequence it is considered by some players quite legitimate to disable opponents by kneeling upon them, by hacking, or by heavy blows on the head and particularly about the eyes, the nose, and the jaw. He speaks of players as "trying to discover the weakest man in the opponent's line, as, for example, the man most recently injured, so as to attack him again and again." Dr. Eliot summarises thus the sources of the grave evils in the game: (1) the immoderate desire to win intercollegiate games; (2) the frequent collisions in masses which make foul play invisible; (3) the profit from violations of rules; and (4) the misleading assimilation of the game to war as regards its strategy and its ethics. The announcement has been made recently that any cadet of the United States army or navy academies who during the games played by these academies may be declared by the umpire to have been deliberately brutal will be dismissed from the service. This is a drastic remedy and should be effective.

ASYLUM REPORTS.

Wilts County Asylum (Report for the Year ending March 31st, 1905).—During the year 1904 151 patients were admitted, of whom 76 were in the most favourable class for treatment (first attack, within three months of admission), 72 were discharged, and 82 died, leaving 977 in residence at the close of the year. During the past four years the admissions have decreased progressively from 189 to 151. The medical superintendent, Mr. J. Ireland Bowes, remarks that the "unbroken continuance of this falling-off makes the outlook as to the future more hopeful." The recovery-rate reached the satisfactory percentage of 42·3 of the admissions. The death-rate was no more than 8·3 per cent. of the daily average number resident. The number of male patients resident is in excess of the accommodation but steps have been taken to deal with overcrowding should that become acute. Recent congestion in the wards for the females has been relieved by the building of a villa to accommodate 54 patients and eight nurses, and we find that the cost of building and furnishing divided by the number of the patients alone is nearly £115 per bed, which is certainly economical and considerably less than the sum allowed by the county council. Mr Bowes makes certain deductions from the admissions (151 in number) as to the relationship between the married state and insanity and as to the incidence of insanity at different age periods in the two sexes, but such deductions, though possibly correct, require, in order to be of real value, to be drawn from more abundant material. The report states that the insanity of those admitted "assumed more the nature of melancholia and the cases of acute maniacal insanity, which is the more curable form, become less common and are the exception rather than the rule." Table II. of the medical statistics shows, however, that 37 cases of acute mania were admitted, as against 22 of acute melancholia, so that the former condition decidedly preponderates still. What with imbecility, general paralysis, and senile dementia amongst the cases to be dealt with it is complained that there remains but little material from which to get recoveries. Of the deaths, 18·2 per cent. were due to tuberculosis. But from a table supplied, which is an unusual one in asylum reports but of decided interest and which gives the more important naked-eye changes found at death, it appears that the total number of cases of active tuberculosis, whether the cause of death or not, in the 69 necropsies was 20 (29 per cent.), and seven other cases showed signs of old quiescent tubercle. This table further shows that out of the 69 necropsies no less than 55 exhibited "degeneration of the heart," which term does not apparently cover cases of recent endocarditis and of chronic valvular disease, these being separately mentioned. The expression requires definition. The relief afforded in past years by workhouses in receiving cases from the asylum is now missed, and this asylum, in common with others, notices a growing reluctance on the part of friends to receive back their discharged relatives. 21 cases of dysentery occurred. The disease appears to have been imported and little hope is entertained of stamping it out so long as overcrowding continues; experience is adduced which clearly associates the two conditions. The use of sleeping draughts has almost been abolished, chiefly owing to increased facilities for night supervision of patients in large dormitories, a plan which has many advocates. The report of the Commissioners in Lunacy appeared at an earlier date than the present report.

East Sussex County Asylum, Hellingly (Report for the Year ending Dec. 31st, 1904).—From the report of the medical superintendent, Dr. F. R. P. Taylor, it appears that 458 patients were admitted during the year, of which number 220 were fresh cases, the remainder being transferred from other asylums, mostly under contract. 79 patients were discharged recovered and 30 relieved. The deaths were 69, or 7·2 per cent. of the average number daily resident, which latter was 944. Of the 220 fresh cases 23·7 per cent. of the males and 21 per cent. of the females were over 60 years of age, "all practically hopeless" cases, which must have been a depressing circumstance in a new asylum equipped with modern requirements for treatment. 24 of the admissions showed signs of congenital mental defect. Of the 220 cases 147 were presumably cases of first attack. It is thought regrettable that many of them were not sent in earlier. Private patients of the middle class are received at this asylum and it appears that a real need is thus met; in fact, more accommodation of this kind is required and separate from the main asylum. As regards causation, the patients being drawn from a rural population heredity plays a large part, occurring in 48 per cent. of the males and 47·6 per cent. of the females. No doubt there were other cases in which heredity was present, though it could not be traced with the data at hand. These figures are contrasted with figures from the London asylums where heredity varied from 10 to 28 per cent. in the different asylums, showing the effect of a mixed and changing population. In the East Sussex cases there is also much congenital enfeeblement. Alcohol was given as a cause in 17·7 per cent. of males and 5·4 per cent. of females; senility in 15 per cent. of the two sexes together. Dr. Taylor reports very favourably of the acute hospital part of the asylum; practically all patients are received there and the large majority of those discharged recovered never mix with the chronic insane. Senile decay was responsible for 17 per cent. of the male and 27 per cent. of the female deaths, tuberculosis for only seven out of the 69 deaths, and in three of these the disease was diagnosed on admission. The small number of deaths from this disease is all the more satisfactory in view of the statement that last year no less than 47 cases were admitted with active tuberculosis. In the great majority of these the disease has become quiescent. Tuberculous patients are isolated in separate wards so far as possible. Dr. Taylor believes that tuberculosis is generally present on admission to the asylum in those who die from it, and in this belief he is by no means alone. Amongst the deaths was that of a female who developed a duodenal fistula from the extrusion of a dessert fork which she stated she had swallowed some three years previously at another asylum. It gave rise to no symptoms till the prongs protruded through the anterior abdominal wall. She died from exhaustion. The general health of the

asylum was good but there were two outbreaks of dysentery, one somewhat severe. There seems to be no doubt that the disease was imported by cases transferred from other asylums. The experience in this, as in other asylums, is that the cases which relapse with slight symptoms are mainly instrumental in spreading the malady. A male infirmary is staffed with female nurses and those who advocate this course will be interested to learn that the results are very favourable. There are at this asylum several villas, all, it appears, for working patients excepting one which accommodates 60 children who are thus kept away from the main asylum. The committee reports that it has appointed a female industrial trainer for the idiot children with most satisfactory results. The Commissioners in Lunacy report favourably of the condition and management of the asylum.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8238 births and 4683 deaths were registered during the week ending Nov. 4th. The annual rate of mortality in these towns, which had been 13·7, 14·1, and 14·8 per 1000 in the three preceding weeks, further rose last week to 15·6 per 1000. In London the death-rate was 16·6 per 1000, while it averaged 15·2 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 6·2 in Hornsey, 8·2 in Leyton, 9·1 in Willesden, 9·3 in Handsworth (Staffs), 9·4 in Reading, 9·7 in King's Norton, 9·8 in Norwich, and 9·9 in Burton-on-Trent and in Grimsby; the highest rates were 20·1 in Middlesbrough, 20·2 in Hanley, 20·5 in Bournemouth, 20·6 in Bootle, 22·0 in Huddersfield and in Gateshead, 22·3 in Blackburn, and 23·4 in Oldham. The 4683 deaths in these towns last week included 373 which were referred to the principal infectious diseases, against 376, 343, and 354 in the three preceding weeks; of these 373 deaths, 80 resulted from measles, 75 from diarrhœa, 69 from diphtheria, 64 from scarlet fever, 56 from whooping-cough, and 29 from "fever" (principally enteric), but not any from small-pox. No death from any of these diseases was registered last week in Hornsey, Ipswich, Norwich, Plymouth, Handsworth (Staffs), Aston Manor, Coventry, Grimsby, Stockport, St. Helens, Tynemouth, or Newport (Mon.); among the other large towns the highest death-rates from the principal infectious diseases were recorded in Smethwick, Wallasey, Warrington, Oldham, Preston, Barrow-in-Furness, Gateshead, and Rhondda. The greatest proportional mortality from measles occurred in Preston, Barrow-in-Furness, Rhondda, and Swansea; from scarlet fever in Smethwick, Warrington, and Oldham; from diphtheria in Hull and Merthyr Tydfil; and from diarrhœa in West Bromwich, Oldham, Gateshead, and Swansea. The mortality from whooping-cough and that from "fever" showed no marked excess in any of the large towns. No fatal cases of small-pox were registered last week in any of the 76 towns; and no small-pox patients were under treatment last week in the Metropolitan Asylums Hospitals. The number of scarlet fever cases in these hospitals and in the London Fever Hospital on Saturday last Nov. 4th, was 4200, against 3954, 4153, and 4222 on the three preceding Saturdays; 522 new cases were admitted during the week, against 511, 522, and 506 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 191, 248, and 286 in the three preceding weeks, further rose to 340 last week and were 55 above the number in the corresponding period of last year. The causes of 55, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Bolton, Bradford, Cardiff, and in 46 other smaller towns; the largest proportions of uncertified deaths were recorded in Portsmouth, West Bromwich, Birmingham, Liverpool, St. Helens, Manchester, Rochdale, Blackburn, Gateshead, and Newcastle-on-Tyne.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·3, 16·3, and 18·7 per 1000 in the three preceding weeks, declined again to 17·6 per 1000 during the week ending Nov. 4th, but was 2·0 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·1 in Perth and 12·3 in Aberdeen to 19·7 in Dundee and 23·8 in Greenock. The 591 deaths in these towns included 19 which were referred to measles, 17 to diarrhœa, eight to whooping-cough, six to diphtheria, four to "fever," and one to scarlet fever. In all 55 deaths resulted from these principal infectious diseases last week, against 55, 75, and 54 in the three preceding weeks. These 55 deaths were equal to an annual rate of 1·7 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of measles, which had been ten, 22, and 19 in the three preceding weeks, were again 19 last week, and included eight in Glasgow, five in Dundee, and five in Greenock. The deaths from diarrhœa, which had been 23, 29, and 17 in the three preceding weeks, were 17 again last week, and included ten in Glasgow, three in Edinburgh, and two in Dundee. The fatal cases of whooping-cough, which had been eight, eight, and nine in the three preceding weeks, declined again last week to eight, of which five were registered in Glasgow. The deaths from diphtheria, which had been eight, seven, and six in the three preceding weeks, were again six last week, and included two in Edinburgh and two in Dundee. The fatal cases of "fever," which had been two and three in the two preceding weeks, further rose last week to four, of which two occurred in Dundee. The deaths referred to diseases of the respiratory organs, which had been 106, 108, and 152 in the three preceding weeks, declined again last week to 127, but were eight in excess of the number in the corresponding period of last year. The causes of 21, or nearly 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·3, 18·3, and 17·9 per 1000 in the three preceding weeks, rose again to 25·6 per 1000 during the week ending Nov. 4th. During the past four weeks the death-rate has averaged 20·0 per 1000, the rates during the same period being 15·3 in London and 16·3 in Edinburgh. The 186 deaths of persons belonging to Dublin registered during the week under notice were 56 in excess of the number in the preceding week, and included six which were referred to the principal infectious diseases, against seven in each of the two preceding weeks; of these, four resulted from diarrhœa, and two from "fever," but none from any other of the principal infectious diseases. These six deaths were equal to an annual rate of 0·8 per 1000, the death-rates last week from the principal infectious diseases being 1·2 in London and 0·8 in Edinburgh. The fatal cases of diarrhœa, which had been four, one, and three in the three preceding weeks, rose again last week to four. The 186 deaths in Dublin last week included 34 of children under one year of age and 63 of persons aged 60 years and upwards; the deaths both of infants and of elderly persons were in excess, being respectively 11 and 20 above the numbers in the preceding week. Five inquest cases and three deaths from violence were registered; and 81, or more than two-fifths, of the deaths occurred in public institutions. The causes of four, or more than 2 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING OCTOBER, 1905.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 10·0 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 6·8, 6·8, and 9·4 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, the City of Westminster, St. Marylebone, and Hampstead; and the highest rates in Bethnal Green, Stepney, Poplar, Bermondsey, and Deptford. Two cases of small-pox, both belonging to Hackney, were notified last month. The prevalence of scarlet fever, which had shown a continuous rise during the three preceding months, further

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING OCTOBER, 1905.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1905.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.											Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,684,794	2	2238	590	1	201	2	30	523	—	3587	10·0	—	94	45	36	55	—	24	—	172	426	1·2	5028	14·0	110
West Districts.																										
Paddington	147,935	—	23	6	—	7	—	—	20	—	56	4·9	—	2	2	—	2	—	—	—	4	10	0·9	152	13·4	117
Kensington	180,083	—	26	10	—	4	—	1	19	—	60	4·3	—	10	2	—	3	—	—	—	6	21	1·5	197	14·2	111
Hammersmith	119,037	—	33	16	—	7	—	1	12	—	69	7·6	—	—	1	3	1	—	1	—	5	11	1·2	114	12·5	78
Fulham	157,210	—	82	26	—	11	—	1	18	—	138	11·4	—	2	1	1	4	—	3	—	6	17	1·4	145	12·0	129
Chelsea	74,496	—	31	4	—	3	—	2	6	—	46	8·0	—	1	—	—	—	—	—	—	4	5	0·9	66	11·5	107
City of Westminster	175,606	—	41	15	—	2	—	1	13	—	72	5·3	—	2	4	—	—	—	—	—	3	9	0·7	179	13·3	139
North Districts.																										
St. Marylebone	129,453	—	27	11	—	1	—	1	15	—	55	5·5	—	—	1	—	—	—	—	—	7	8	0·8	144	14·5	76
Hampstead	88,142	—	14	6	—	1	—	—	3	—	24	3·6	—	—	—	—	—	—	—	—	1	1	0·2	59	8·7	96
St. Pancras	236,183	—	120	14	—	14	—	2	24	—	174	9·6	—	5	4	—	1	—	1	—	10	21	1·2	268	14·8	123
Islington	342,994	—	120	37	—	9	—	2	35	—	203	7·7	—	4	7	1	3	—	—	—	14	29	1·1	355	13·5	119
Stoke Newington	52,828	—	14	10	—	2	—	—	2	—	28	6·9	—	—	—	2	—	—	—	—	—	2	0·5	45	11·1	92
Hackney	228,479	2	117	32	—	21	—	1	31	—	204	11·6	—	—	—	1	1	—	2	—	8	12	0·7	215	12·3	75
Central Districts.																										
Holborn	56,481	—	11	11	—	4	—	—	5	—	31	7·2	—	—	—	—	—	—	—	—	1	1	0·2	81	18·7	69
Finsbury	98,207	—	57	17	—	8	—	—	15	—	97	12·9	—	—	1	—	3	—	3	—	8	15	2·0	124	16·5	110
City of London	22,425	—	14	1	—	—	—	—	3	—	18	10·5	—	—	—	—	—	—	—	—	1	1	0·6	21	12·2	40
East Districts.																										
Shoreditch	116,565	—	83	10	—	5	—	1	14	—	113	12·6	—	—	2	1	4	—	—	—	3	10	1·1	139	14·4	120
Bethnal Green	130,401	—	91	22	—	6	—	1	15	—	135	13·5	—	3	—	3	4	—	—	—	10	20	2·0	188	18·8	165
Stepney	305,466	—	208	28	1	20	—	1	53	—	311	13·3	—	7	5	—	9	—	5	—	12	38	1·6	375	16·0	116
Poplar	170,280	—	162	60	—	6	—	2	27	—	257	19·7	—	1	5	5	4	—	1	—	8	24	1·8	202	15·5	98
South Districts.																										
Southwark	208,528	—	112	36	—	15	—	—	28	—	191	11·9	—	28	2	5	1	—	3	—	11	50	3·1	315	19·7	139
Bermondsey	129,006	—	91	12	—	7	—	1	18	—	129	13·0	—	3	—	—	3	—	—	—	12	18	1·8	165	16·7	144
Lambeth	313,045	—	114	47	—	9	1	2	29	—	202	8·4	—	10	2	2	3	—	—	—	5	22	0·9	308	12·8	69
Battersea	177,532	—	113	11	—	7	—	2	6	—	139	10·2	—	2	—	2	3	—	1	—	7	15	1·1	207	15·2	149
Wandsworth	285,392	—	163	53	—	12	—	3	23	—	254	12·5	—	4	1	3	2	—	2	—	6	18	0·9	231	11·3	94
Camberwell	271,240	—	171	22	—	5	—	2	43	—	243	11·7	—	3	4	1	3	—	—	—	6	17	0·8	273	13·1	123
Deptford	114,495	—	77	20	—	4	—	—	18	—	119	13·5	—	2	—	2	—	—	1	—	4	9	1·0	129	14·7	89
Greenwich	103,493	—	27	17	—	4	—	—	8	—	56	7·1	—	1	—	4	—	—	1	—	4	10	1·3	117	14·7	120
Lewisham	144,420	—	53	21	—	1	—	2	12	—	89	8·0	—	3	1	—	—	—	—	—	4	8	0·7	133	12·0	101
Woolwich	125,372	—	43	15	—	1	1	1	8	—	69	7·2	—	1	—	—	1	—	—	—	2	4	0·4	91	9·5	71
Port of London	—	—	—	—	—	5	—	—	—	—	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

increased during October; among the various metropolitan boroughs this disease was proportionally most prevalent in Shoreditch, Bethnal Green, Stepney, Poplar, Bermondsey, Battersea, and Camberwell. The Metropolitan Asylums hospitals contained 4187 scarlet fever patients at the end of last month, against 2527, 2860, and 3567 at the end of the three preceding months; the weekly admissions averaged 509, against 338, 368, and 487 in the three preceding months. Diphtheria was considerably more prevalent last month than in either of the two preceding months; the greatest proportional prevalence of this disease occurred in Stoke Newington, Holborn, Finsbury, Poplar, Wandsworth, and Deptford. The Metropolitan Asylums hospitals contained 796 diphtheria patients at the end of last month, against 785, 665, and 730 at the end of the three preceding months; the weekly admissions averaged 123, against 118, 83, and 114 in the three preceding months. The prevalence of enteric fever showed a slight decline last month; this disease was proportionally most prevalent in Fulham, Hackney, Holborn, Finsbury, Stepney, and Southwark. There were 157 enteric fever patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 94, 121, and 143 at the end of the three preceding months; the weekly admissions averaged 26, against 17, 20, and 24 in the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Hackney, Finsbury, Stepney, Poplar, Bermondsey, Camberwell, and Deptford. The 30 cases of puerperal fever notified during the month included three in Wandsworth and two each in Chelsea, St. Pancras, Islington, Poplar, Lambeth, Battersea, Camberwell, and Lewisham.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending Oct. 28th 5028 deaths of persons belonging to London were registered, equal to an annual rate of 14·0 per 1000; in the three preceding months the rates had been 11·9, 16·2, and 13·6 per 1000. The death-rates last month ranged from 8·7 in Hampstead, 9·5 in Woolwich, 11·1 in Stoke Newington, 11·3 in Wandsworth, 11·5 in Chelsea, and 12·0 in Fulham and in Lewisham, to 16·0 in Stepney, 16·5 in Finsbury, 16·7 in Bermondsey, 18·7 in Holborn, 18·8 in Bethnal Green, and 19·7 in Southwark. The 5028 deaths from all causes in London last month included 426 which were referred to the principal infectious diseases; of these, 94 resulted from measles, 45 from scarlet fever, 36 from diphtheria, 55 from whooping-cough, 24 from enteric fever, and 172 from diarrhœa. The lowest death-rates from these diseases were recorded in Hampstead, Stoke Newington, Holborn, the City of London, and Woolwich; and the highest rates in Kensington, Finsbury, Bethnal Green, Stepney, Poplar, Southwark, and Bermondsey. The 94 deaths from measles were seven in excess of the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Kensington, St. Pancras, Bethnal Green, Stepney, Southwark, Bermondsey, and Lambeth. The 45 fatal cases of scarlet fever were nine below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in the City of Westminster, St. Pancras, Islington, Shoreditch, Stepney, and Poplar. The deaths from diphtheria numbered 36 last month, against a corrected average of 162 in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Hammersmith, Stoke Newington, Bethnal Green, Poplar, Southwark, and Greenwich. The 55 fatal cases of whooping-cough were slightly below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Fulham, Finsbury, Shoreditch, Bethnal Green, Stepney, Poplar, and Bermondsey. The 24 deaths from enteric fever were only one-third of the average number in the corresponding periods of the ten preceding years; of these 24 deaths, five belonged to Stepney, three each to Hammersmith, Finsbury, and Southwark, and two each to Hackney and Wandsworth. The 172 fatal cases of diarrhœa were 70 below the corrected average number; among the various metropolitan boroughs the greatest proportional mortality from this disease was recorded in Chelsea, St. Marylebone, Finsbury, Bethnal Green, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 36 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 110 per 1000. The lowest rates of infant mortality were recorded in Hammersmith, St. Marylebone, Hackney, Holborn, the City of London, Lambeth, and Woolwich; and the highest rates in Fulham, the City of Westminster, Shoreditch, Bethnal Green, Southwark, Bermondsey, Battersea, and Greenwich.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Fleet Surgeon Archibald McKinlay has been placed on the Retired List at his own request, with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets.

The following appointments are notified:—Fleet Surgeons: J. E. Coad and J. Lloyd Thomas to the *President*, for three months' course at West London Hospital, and J. Andrews to the *Vengeance*. Surgeons: E. S. Reid to the *Victory*, for disposal, and C. R. Sheward to the *Pembroke*, temporary.

ROYAL ARMY MEDICAL CORPS.

Captain H. R. Bateman is appointed for duty with the troops in London. Lieutenant R. B. Hole is transferred from the 5th (Mhow) Division to the 6th (Poona) Division, and appointed officer commanding Station Hospital, Khandalla.

The undermentioned Captains to be Majors (dated Oct. 29th, 1905): Harold V. Prynne, Alfred E. Master, George Dansey-Browning, Ernest S. Clark, Kennet B. Barnett, Kenneth M. Cameron, Arthur C. Fox, Sebert F. St. D. Green, and Walter Tibbits.

INDIAN MEDICAL SERVICE.

To be Surgeon-General: Bombay: Colonel (temporary Surgeon-General) John Philip Greany (dated June 20th, 1905). To be Colonels: Bengal: Lieutenant-Colonel Charles Henry Beatson (dated June 16th, 1905), and Lieutenant-Colonel Thomas Elwood Lindsay Bate, C.I.E. (dated July 12th, 1905). Bombay: Lieutenant-Colonel (temporary Colonel) James McCloghry (dated June 20th, 1905), and Lieutenant Colonel Harry Beecham Briggs (dated July 10th, 1905). Captain to be Major: Bombay: Patrick Percy Kilkelly (dated July 29th, 1905). Lieutenants to be Captains (dated July 26th, 1905): Frederick Adolphus Fleming Barnardo, James McPherson, George Denne Franklin, Charles Aikman Gourlay, William Charles Ross, Robert Archer Lloyd, John Conrad Gie Kunhardt, Ernest Alexander Walker, Lewis Cook, Leonard Bodley Scott, Gerard Irvine Davys, Robert Hallilay, George Cook Irvine Robertson, Alfred John Vernon Betts, Frederick Ernest Wilson, Walter Scott Patton, William Leigh Trafford, Behramji Barjorji Paymaster, Norman Walter Mackworth, Henry Ross, John Forrest, Howard Crosse, Leonard Hirsch, Laurence Rundall, Edward Charles Cecil Maunsell, Herbert Ernest Jardine Batty, John Warwick Illius, Daniel Stanislaus Aloysius O'Keefe, and John Philip Cameron. To be Lieutenants (dated Feb. 1st, 1905): Arthur Francis Hamilton, Arthur Denham White, Michael Foster Reany, Ralph Koper White, Hugh Clive Buckley, Norman Methven Wilson, John Stevenson O'Neill, Matthew Robert Cecil MacWatters, William Herbert Boalth, George Alick Soltau, William Haywood Hamilton, John Cunningham, Herman Falk, and Charles Joseph Coppinger.

The King has approved of the transfer to the Temporary Half pay List of the undermentioned officers:—Major Wilfred Ernest Arbuthnot Armstrong (dated March 12th, 1905), and Captain George Cook Irvine Robertson (dated Sept. 17th, 1905).

The King has also approved of the retirement from the service of the following officers:—Surgeon-General William McConaghey (dated June 20th, 1905); Lieutenant-Colonel Patrick Fenelon O'Connor, C.B (dated July 13th, 1905); Lieutenant Colonel John Henry Tull Walsh (dated July 21st, 1905); Lieutenant-Colonel George Tucker Thomas (dated June 26th, 1905); Lieutenant-Colonel John Lancaster (dated April 1st, 1904); Major George Thomas Mould (dated July 28th, 1905); and Daniel Grove Marshall (dated June 24th, 1905).

IMPERIAL YEOMANRY.

Derbyshire: Surgeon-Captain R. M. Wilson resigns his commission (dated Nov. 4th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Argyll and Bute: Surgeon-Captain J. Banks resigns his commission (dated Nov. 4th, 1905). 3rd Middlesex: Surgeon-Lieutenant C. G. Watson to be Surgeon-Captain (dated Oct. 16th, 1905).

Royal Engineers (Volunteers): 1st Sussex: Surgeon-Lieutenant R. M. Johnston to be Surgeon-Captain (dated Nov. 4th, 1905).

Rifle: 8th Volunteer Battalion, the Royal Scots (Lothian Regiment): Surgeon-Major R. Kirk to be Surgeon-Lieutenant-Colonel (dated Nov. 4th, 1905).

Infantry: 3rd Volunteer Battalion, the Duke of Wellington's (West Riding Regiment): Alexander Waugh (late Captain) to be Surgeon-Lieutenant (dated Nov. 8th, 1905).—The Prince of Wales's Own, 12th Middlesex (Civil Service) Volunteer Rifle Corps: Surgeon-Captain T. H. Dickson to be Surgeon-Major (dated Oct. 23rd, 1905).—1st Volunteer Battalion, the Durham Light Infantry: The under-mentioned gentlemen to be Surgeon-Lieutenants: Henry Carden Pearson (dated Nov. 8th, 1905), Duncan Alexander Cameron (dated Nov. 8th, 1905), and Arthur James Dale (dated Nov. 8th, 1905); the under-mentioned Surgeon-Lieutenants are borne as supernumerary whilst doing duty with the Bearer Company of the Durham Light Infantry Volunteer Infantry Brigade: H. C. Pearson (dated Nov. 8th, 1905) and D. A. Cameron (dated Nov. 8th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Scottish Command: Glasgow Companies: Captain A. J. MacDougall, R.A.M.C., to be Adjutant, vice Major C. C. Fleming, D.S.O., R.A.M.C., whose tenure of that appointment has expired (dated Oct. 16th, 1905).

SIR FREDERICK TREVES ON THE ARMY MEDICAL SERVICE.

In a leading article last week on Sir Frederick Treves's address at Brighton on the Army Medical Service it was only possible to deal with some of its more salient points. Speaking generally, Sir Frederick Treves adopted an optimistic tone, in which he was no doubt justified having regard to the many striking changes for the better which have taken place in that service since the date of the South African war. But he carefully guarded himself against being supposed to hold the view that the Army Medical Service was in a position to cope with the emergency of an important war. On the contrary, he very forcibly dwelt upon the necessity of further changes being introduced so as to give the Army Medical Department a more free, independent, and influential position than it possesses at present and he indicated at the same time many directions in which such changes are most required. There is no need to recapitulate all that he said in this respect but we may take one point. No country could stand the expense of a medical service maintained on a war footing; consequently there must be a medical reserve organised in time of peace to meet the contingency of war but at present there is no such reserve, at any rate, not on any adequate scale. In connexion with this subject and that of some future scheme of Imperial defence, of which it really forms part, we think that the statement in the report on the war in South Africa by the Royal Commission which was presided over by the Duke of Norfolk, may be referred to here. The Commissioners expressed the opinion that "no military system will be satisfactory which does not contain powers of expansion outside the limit of the regular forces of the Crown." This principle is capable of an even more extended application than was perhaps contemplated. With the means and material at the disposal of the British empire it is surely not beyond the power of some statesman to devise an organised and unified scheme of Imperial defence and of coöperative medical aid in which this country and her colonies can take part in case of our being engaged in some big war in the future. With the recollection of what happened in South Africa on account of our unpreparedness and of all that has since taken place in the Far East we can surely form a very good idea of the amount of medical aid of all sorts and properly organised that will be required.

MR. ARNOLD-FORSTER'S EXPLANATORY LETTER.

We advise all those who are interested in the subject of the present state and progress of army affairs to read Mr. Arnold-Forster's letter to Sir Gilbert Parker which appeared in the daily journals of Nov. 7th. It is explanatory of the difficulties connected with the supply of drafts to the Indian Army and of the measures taken to meet or to overcome them. It is only fair to the War Minister, when so much doubt and misgiving exist in regard to his army scheme, that what he has to say thereon should be duly read and considered. He condemns the "alarming and mysterious allusions" that have been made to the subject, says that there is nothing to conceal, and refers at length to the clear and consistent policy which he has pursued at the War Office and its success. It has yet to be seen, however, what will be the effect of running a short service system of enlistment alongside a long service one; it may be that one will starve the other.

MEDICAL OFFICERS OF HEALTH AND THE ADMIRALTY REGULATIONS.

At the meeting of the West Penwith rural district council held at Penzance on Nov. 2nd the medical officer of health (Mr. J. R. M. Richmond) reported that two cases of enteric fever had occurred at Tennen Cove Coastguard station. He visited the station but was refused admission under a clause in the coastguard regulations. Mr. Richmond added that he had written to the Local Government Board and in reply had been informed that in Section 327 of the Public Health Act, 1875, it was stated that he had no right to interfere with Crown property, but under another section of the Act he could, if he thought fit, exclude the children of the affected district from the public elementary schools. After a considerable discussion it was decided to write to the Admiralty and call attention to the great disadvantage which the council experienced through their medical officer of health not being allowed to inspect the coastguard station.

THE ROYAL ALBERT HOSPITAL, DEVONPORT, AND THE ADMIRALTY.

For the convenience of naval officers in the West of England the Admiralty has decided to hold a war course at Devonport on Nov. 27th. The Admiralty will convert the "lock wards" at the Royal Albert Hospital, which have not been used for many years, into lecture rooms. The building will be subsidiary to the Royal Naval College, Greenwich, and will be under the direction of a professorial staff from that establishment.

Surgeon G. Gibson, R.N., of the *Assistance*, has been awarded a bronze medal by the committee of the Royal Humane Society for his gallantry in jumping overboard from that vessel on August 18th and saving a seaman.

Correspondence.

"Audi alteram partem."

ENTERIC FEVER IN THE ARMY.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Oct. 21st, in an annotation under the above heading (p. 1201), you refer to the recent letter in the *Times* by the Principal Medical Officer in India *apropos* of the assumed possibility of extirpating this disease in the army through the sterilisation of the water for drinking purposes; and as one who in bygone days has done his "little best" to elucidate and put on record the nature of the disease abroad, especially in India, its associations and causation, I would like to add my support to that given in the letter and by you, Sirs, in the annotation above mentioned, to the view "that water is by no means the one and only source of enteric infection" and that the mere boiling of it before usage is no guarantee against the disease. So far as the army is concerned the position taken by Sir Thomas J. Gallwey is, I take it, essentially the right one, based as it is on the evidence furnished by the troops as a whole, whether at home or abroad, in barrack or camp, each country occupied giving its quotum in support of the conclusions as a whole derived from the study of the disease and from practical experience, the cause being the same throughout the world, the surroundings varying.

This water-borne theory of enteric diffusion was brought very prominently forward many years ago by the late editor

of the *British Medical Journal*, and while undoubtedly explaining the facts of many epidemics in this country falls short of embracing the features surrounding the origin and incidence of much of the army disease whether as "sporadic" cases or as "localised outbreaks." In 1881, after collecting as many detailed records of the disease in army literature as I could lay my hands upon, the conclusions which they supported were, tersely put, as follows, so far as the surrounding conditions were concerned:—"There is not a system of conservancy—sewers, cesspits, tubs, dry earth—or a system of drinking water-supply—from a distance, rainfall locally stored, wells—which has not been associated with an outbreak in the service. That the systems are not of equal importance for development and dissemination is apparent, and it is hardly necessary to remark that the disease is not connected with any especial one." ..... "We may say that the two media—atmosphere and water—are about equally balanced, though the position each occupies in the diffusion of the disease varies considerably in each country and at different times, and it is obvious that it must and will vary relative to the particular sanitary defects; the country, climate, or soil do not alter the results." And I may add that the views then put on record I have seen no reason to change either from subsequent personal experience or from recorded observations by others.

Can anyone with a practical knowledge of the conditions under which the soldier is placed, in barrack, in camp, or on the line of march, and taking into full consideration the incidence of the cases which do occur, concur in the view that sterilisation of the drinking water will extirpate the malady in the army? Does not the incidence of the disease show conclusively that no one common factor, such as the water-supply, can explain the results? The major number of army cases are so-called "sporadic" in character, isolated from each other as to time and space, and will not arrange themselves under any one detail common to the regiment or corps as a whole; and though some of the localised outbreaks have doubtless been rightly traced to a particular well or the source of water-supply of a section and so far illustrate the potency of this medium when operative, yet there are other outbreaks just as numerous which cannot be so explained, the evidence at hand clearly indicating another medium in the production of the results. And, besides, let us remember that already no small portion of the water which the soldier takes into his system does undergo the process of boiling, while to some of it application of any such measure is beyond the barrack authorities, and that outside these two details there remains but a fraction of the whole.

Broadly regarding the subject, it is evident that the barrack and its conditions, the soldier in occupation, do not generate the disease, which is derived from an outside source—the community with which he is temporarily quartered, the locality and ground surroundings of the camps he temporarily occupies; and rarely does the disease when introduced find the necessary conditions for localisation. The plain fact is, that the soldier participates in this disease as in others also simply because they exist in the community surrounding him; and the danger of limiting the attention to one possible mode in which the disease may come to him from outside—one medium of infection—is not only that it excludes from operation others equally potent, but that it tends to limit the range of necessary action to his small section of the community to the ignoring or minimising of the larger and more important sphere which surrounds him and over which military authority does not operate. Another plain fact is that the soldier abroad suffers markedly from the disease because he is sent there at the most susceptible age, he acting as a touchstone to the adverse conditions under which he comes and illustrating notably their existence in the disease results; and beyond all reasonable doubt he will continue thus to suffer despite all the reasonable precautions we can take—sterilisation of his drinking water as far as possible or otherwise—so long as the senseless and heartless present system pertains. Recognising that enteric fever abounds wherever the soldier is quartered and that it comes to him from an outside source, recognising that we cannot isolate him from the surrounding community and that the ways of infection are more than one, let us, while taking all the sanitary precautions which science and experience suggest as feasible, bear in mind that one practical course for curtailing its ravages in our small army lies ready for adoption, and that is to allow only those to enter the ranks and to go abroad who are relatively immune—beyond the age of marked susceptibility to the cause. True it is we shall not extirpate the disease in so doing, for no age is exempt, but we can thus reduce the proportion to a comparatively negligible quantity. Herein lies a remedy far more potent in bringing about the object we have in view than any sterilisation of that part of the drinking water over which the military authority has control, and herein also lies the remedy for removing that tarnish from which our nation suffers—the introduction of immature creatures—lads—into the ranks unfit to bear the physical burden placed upon them and unfit to be entrusted with the maintenance of our position as a nation in the world at large.

Whatever neglect there may be in taking the necessary measures against enteric fever in the army that neglect does not lie on the shoulders of its sanitary advisers in the past; valuable information there is in abundance pigeon-holed or ignored. Rather let it be rightly assessed against the indifference of the community to army well-being and to those in high army quarters who have promulgated the teaching that sanitation is "a fad."

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.

Lee, S.E., Oct. 31st, 1905.

FOOD AS A CULTURE MEDIUM FOR PATHOGENIC ORGANISMS.

To the Editors of THE LANCET.

SIRS,—The growing importance of the relation of food to disease tempts me to give you a brief outline of some problems connected therewith that have lately forced themselves upon my attention. I do this in order to, if possible, induce some of your readers to present other views upon the subject and give us British experience along the same lines. In the United States the pure food question is uppermost in the minds of everybody and, unfortunately, I find myself forced, by what appear to be stubborn facts, to occupy a position antagonistic to a large number of medical friends. To me they seem to forget or to ignore established principles of medical science.

The part which food must play as a culture medium for pathogenic micro-organisms, while well known, seems wholly ignored in drawing conclusions. The part played by the resisting power of our body, though equally well known, seems never to enter into conclusions upon this subject. By remembering constantly and consistently putting these two truths together a fertile hypothesis for a reasonable explanation of many apparent eccentricities of disease is the result. Under this hypothesis diseases not imparted by stings, wounds, or abrasions of skin or mucous membrane result from the swallowing, in food or water, of concentrated colonies of disease germs. Air, water, and fomites carry germs into food where a few multiply into millions in the course of a day. The diffused disease germs that incessantly surround us are powerless for harm because our natural resistance, brought about by millenniums of evolution, cannot be overcome except by multitudes of them. Disease is due to an accident, the accident of a sting, an abrasion, or a toxin-laden mass of germs capable of immediately attacking and reducing our defences.

If this hypothesis is correct the taking away of different members of a family by disease and leaving the rest is simply due to the *dose* of toxin with associated germs that happens to be swallowed. The immunity plays but a secondary part that need not be discussed here. The uneven distribution of colonies in any mass of food could only produce just such conditions as we find. Small doses would give mild attacks; large doses, severe attacks; minute doses, no attack. The same food would, from different parts, give different doses. Summer brings warmth to soften filth, flies to carry seed germs from the filth, and warmth to hasten multiplication of such seed in our food. Everybody is not attacked by filth diseases, in spite of exposure, because everybody does not happen to swallow food containing a big enough dose. Diarrhœal diseases, excluding typhoid fever, while attacking all ages show a preference for the extremes of life. Diagrams of statistics show a sort of hour-glass contraction for middle life. Milk and liquid foods are the carriers and these are the foods of childhood and age *par excellence*. The cities suffer more from such diseases than the country because milk in reaching city consumers suffers exposure to warmth, dust, flies, and dilution from polluted water.

According to our hypothesis typhoid fever should be, as it is,

a disease of every month of the year, because water is used for culinary purposes, is usually more or less filth-polluted, and carries into every food-vessel typhoid seed germs. It should be, as it is, at its maximum in the autumn, because flies and dust add their sowings of germs to the constant water sowings. It should ravage our southern States, as it does, more than our northern, because the longer protracted warm weather enables flies to live longer and enables dust to blow longer. It should multiply into an epidemic where there are armies, as it does, because the latrines cultivate hosts of flies to carry germs to food and the food is more exposed to conditions favourable for germ multiplication. It should, as it does, attack the strong, hearty young men and women of the world with greater certainty and fatality than the very young or aged. Diagrams of statistics look like a miniature spinning-top, bulged in the middle, contracted at the ends. Meats, poultry, oysters, sea food of various kinds, sausages, mince pies, ice cream, &c., are all exposed to sowings by their containers having been washed in water. Solitary germs multiply into immense colonies. These give the disease in a ratio of certainty corresponding with the heartiness of the eaters, the quantity eaten, and the eating when warmed over or, after first meals, without re-warming. Ice cream by being thawed and re-frozen successive times after exposure to flies would be expected to do its mischief. From infancy to manhood this class of foods is consumed in ever-increasing amounts, and from manhood to old age in ever-decreasing amounts. A diagram of the food would be like a diagram of death-rates if drawn from statistics of consumption. It has become the habit to attribute to immunity among infants and the aged exemption from the ravages of this disease. Such an explanation has not a solitary fact on which to rest and is opposed by every reasonable deduction of natural selection. The statistics of tuberculosis are almost duplicates in diagrammatic form of those of typhoid fever. The cause is probably the same in kind. No one thinks of explaining tuberculosis as controlled in this way by immunity, acquired or otherwise.

In the United States endemic typhoid fever increases with increase of urban population for common latitudes. Considering the fact that country people are much more likely than city people to use fresh meat, fresh poultry, fresh milk, fresh butter, and fresh cream, and that it is a very rare event for them to indulge in shell-fish, ice cream, or long-kept Hamburg steaks, this seems anomalous. It does not seem to fit into the hypothesis here propounded. Is there anything that happens to city food with greater certainty than to country food which might have some sort of bearing on this? Is anything added to city food to keep down germ multiplication? If so, then we have a possible explanation. Perhaps some reader can suggest a more probable one. Taking the following figures for typhoid fever from the vital statistics of the 1900 census of the United States (p. 147) and by assuming the possibility that food preservatives *may* have inhibited germ multiplication in food we get this condition:—

Central region—plains and prairies. Chiefly farmers ...	52·1
North Atlantic Coast region. Chiefly city people	14·2
Excess death-rate where preservatives were least used ...	37·9
Prairie region. Chiefly farming population	35·7
Middle Atlantic Coast region. Chiefly city people	14·2
Excess death-rate where preservatives were least used ...	21·5
Missouri River belt. Farmer excess very large	37·9
New England and New York hills and plateaus. Farmers fewer	18·1
Excess death-rate where preservatives were least used ...	19·8
The following are Southern States:	
South-west Central region. Excess of farmers the largest	69·5
South Atlantic Coast region. Farmer excess small	41·8
Excess death-rate where preservatives were least used ...	27·7
Southern interior plateau. Entire population rural ...	76·1
Gulf Coast region. Population 20 per cent. urban	45·2
Excess death-rate where preservatives were least used ...	30·9
The following are western regions of similar latitudes:	
Rocky Mountain region. About 90 per cent. rural	31·8
Pacific Coast region. About 50 per cent. rural	24·1
Excess death-rate where preservatives were least used ...	7·7

More light on this phase of the question may be had by remembering that the greatest increase in the use of preservatives in food in the United States occurred in the decade between 1890 and 1900. So great, indeed, has such increase become since the first-mentioned year that it is a source of alarm and fear that public health may be impaired by the practice. On the theoretic assumption that injurious chemicals can injure in proportion to the amounts used, however small, their use has been bitterly attacked and almost a condition of panic established. The following official figures (p. cxiii.) show the effect of ten years' use on diseases known to be food-borne:—

Disease.	1890.	1900.	Decrease.
Scarlet fever	13·6	11·5	2·1
Diphtheria	70·1	35·4	34·7
Typhoid fever	46·3	33·8	12·5
Dysentery	32·3	13·6	18·7
Diarrhœa	27·2	12·8	14·4
Cholera infantum	70·7	47·8	31·9

These figures are startling enough to warrant some sort of explanation if the hypothetic one demanded by the theory that food is the chief carrier of filth diseases, and of some contagious diseases, is untenable. The official figures for the babies, before and since their milk came to be formaldehyded, are of equal interest and equally startling. Until these figures came before me I was inclined to be opposed to all use of preservatives in milk. The figures are of the registration area and the rates are per 1000 of population (p. 79).

Age.	1890.	1900.	Decrease.
Under one year	205·8	165·4	40·4
One year	84·9	46·6	38·3
Two ears	23·8	20·5	3·3

When these figures were being shown to a friend he brought me a copy of the *Deutsche Nahrungsmittel-Rundschau*, No. 3, 1905, giving an account of the new stringent German law of 1902 against the use of preservatives. As a result of this German experiment it gave the following figures as being from official sources:—

Causes.	1902.	1903.	Increase. Per cent.
Total deaths from cholera	14,403 ...	22,620 ...	52·9
Deaths of infants under one year ...	13,282 ...	20,136 ...	51·6
Deaths from acute intestinal diseases...	31,029 ...	44,377 ...	30·0

As we have had a similar experience with a new preservative prohibitive law in the State of North Dakota, the recently published Biennial Report of the Board of Health of that State was sent for. On p. 34 and 35 we found the following figures giving their results from the first year of that law:—

Deaths (Nov. to Nov.).	1903.	1904.	Increase.
All causes	763	1248	485
Causes not defined	49	124	75
Causes ill defined	21	46	25
Scarlet fever	34	59	25
Diphtheria	17	45	28
Other digestive diseases	64	91	27
Diseases of infancy	20	39	19
Stomach diseases	6	12	6
Liver diseases	6	10	4
Infantile diarrhœa	3	7	4
Non-pulmonary tuberculosis... ...	14	17	3

This is a rather sad record for a small community of about 300,000 people. It is a great pity that only two experiments of this kind have supplied figures by which to test the effects. The coincidence borders on the miraculous, if it is a coincidence, in that both have confirmed the hypothesis we have been considering. There are other figures pointing in the same direction, but this communication is already very long. Will some British physicians supplement this with British figures and British logic?

I am, Sirs, yours faithfully,

Brooklyn, N.Y., U.S.A., Oct. 28th, 1905. R. G. ECCLES.

THE HYGIENE OF THE BUTCHER'S SHOP.

To the Editors of THE LANCET.

SIRS,—A sharp personal attack of entero-colitis distinctly traceable to an infected beef steak has brought to my mind a point which seems to me to have perhaps somewhat escaped the notice by sanitary authorities that it deserves. I refer to the hygiene of the butcher's shop. Slaughter-houses are carefully constructed and inspected regularly, but

the shop where the meat has to remain for far the largest portion of its unconsumed existence seems to call for improvement in its hygiene. The structure of the shop and any premises used for storage need the same careful inspection as the slaughter-house. Impervious slabs should take the place of the wooden counters and chopping blocks which in their interstices must be full of bacterial growth, soaked as they continually are in organic juices. The walls, too, should be made of an impervious washable material; the deftly used saw should take the place of the cleaver with its septic block. The forbidding of the use of putrid brine for pickling should be insisted on. At any rate, I am sure you will agree with me that the subject is worth consideration as a possible source of disease.

I am, Sirs, yours faithfully,

REG. S. PEARSON, M.R.C.S. Eng., D.P.H.

Mildmay-park, N., Nov. 6th, 1905.

VARICOCELE—WHAT OF IT?

To the Editors of THE LANCET.

SIRS,—I have been much interested in the discussion in your pages on the importance of varicocele. As one of the surgeons to the Surgical Aid Society it has fallen to my lot to examine the scrota of a large number of working men and others, and I have paid particular attention for some years to the question of varicocele. I have seen very many large varices in the scrotum but hardly ever have I heard a complaint of one, nor do their bearers apply for suspenders. They have generally been the subjects of hernia. On the other hand, the few patients who have complained of varicocele have had little or nothing to show for it. The statistics of appliances supplied by the society point to a similar conclusion. Thus, out of 34,411 appliances supplied (to both sexes) in 1904 there were 3893 trusses and only 66 suspenders, and if the particulars could be obtained I believe that it would be found that most of these were required for other conditions and not for varicocele. The nervous young man whose attention has somehow been drawn to the veins in his scrotum imagines that they are painful and of serious import, just as he fancies on imaginary evidence that he has spermatorrhœa.—I am, Sirs, yours faithfully,

Duchess-street, W., Nov. 7th, 1905. E. MUIRHEAD LITTLE.

To the Editors of THE LANCET.

SIRS,—I have read with much interest the correspondence on varicocce'e which is appearing in your columns. It has surprised me to find that so many of the writers seem to take the view that the condition is one which, though it may lead to malingering, rarely gives rise to real inconvenience. I am an unfortunate possessor of a double varicocele, one caused by a slight injury 20 years ago and the other developing a few years back. For ten years I had no trouble but since that time I often, and especially after much walking, suffer acute pain which is sometimes so severe that I have to lie down. A suspensory bandage is usually efficacious. I would add that in my experience it is the small varicoceles which give rise to such symptoms and that the large ones usually give their owners no pain whatever and are merely inconvenient on account of their size and position.

I am, Sirs, yours faithfully,

Nov. 3rd, 1905. M.D. AND NOT A MALINGERER.

THE PATHOLOGY AND PREVENTION OF SECONDARY PAROTITIS.

To the Editors of THE LANCET.

SIRS,—Mr. R. T. H. Bucknall in his interesting study of secondary parotitis in THE LANCET of Oct. 21st, p. 1158 makes out a strong case for the duct infection theory. Additional evidence in support of his view can be adduced from the occurrence of parotitis in cases fed solely per rectum. I have seen it several times after the hæmatemesis in gastric ulcer where nutrient enemata were employed. And I believe the rather sticky antiseptic preparations used, often with glycerine as a basis, only help to dry the mouth instead of properly cleansing it, thus increasing the liability to duct infection while adding to the discomfort from thirst. Free washing with cotton-wool swabs held in clip forceps and thoroughly soaked in quite warm water to which a *dilute* antiseptic, such as potassium permanganate, has been added in my opinion is the best preventive.

I am, Sirs, yours faithfully,

W. LANGDON BROWN.

Finsbury-square, E.C., Nov. 4th, 1905.

THE PROPOSED UNION OF LONDON MEDICAL SOCIETIES.

To the Editors of THE LANCET.

SIRS,—There is a phase of this subject which hitherto, it seems to me, has not received the attention it deserves. The organisers of the union have given ample evidence of their desire to consider in every possible way the needs of all medical men residing in the metropolis. I venture to think that this cannot be achieved by completely centralising the efforts of the proposed society in Hanover-square. Medical London may be compared to an ellipse, the centre being in Lincoln's Inn Fields, the residential focus of consultants in Hanover-square, and the focus of communication at Finsbury-circus. It is not generally realised how great a centre the latter constitutes. It is probably easier to get from Finsbury-circus to all parts of London than from any other point. The Liverpool-street and Broad-street railway stations, and the Moorgate-street station on the District and tubes are within a stone's throw. At the same time there is a studious repose about the Circus, lying, as it does, just outside the busy part of the City. On the other hand a large part of the northern, eastern, and south-eastern parts of London are far removed in point of communication from either Hanover-square or Lincoln's Inn Fields.

With these facts in view I cannot help thinking that if the opportunity arises the organisers of the proposed society might consider the feasibility of forming a centre in the City. The union will place into the hands of the new society two reference libraries, so that as far as books are concerned the City centre could be at once completely equipped. How great an advantage to a large number of medical men such a library would be needs no comment. Neither can there be any question as to the desirability of establishing a place in the City under the *cachet* of the new society well appointed for social and professional intercourse. It is an open secret that a scheme of reorganisation of the London Institution is under consideration and I venture to throw out these suggestions as one not unacquainted with the professional needs of that large section of the metropolis far removed from the present habitations of the two societies out of whose union so much is rightly expected.

I am, Sirs, yours faithfully,

THOS GLOVER LYON,
late Honorary Secretary, Hunterian Society.

London, Nov. 7th, 1905.

EMPHYSEMA OCCURRING DURING PARTURITION.

To the Editors of THE LANCET.

SIRS,—I would like to thank Dr. D. Watson for his interesting letter in THE LANCET of Nov. 4th, p. 1360. His experiments on the cadaver would seem to disprove the commonly accepted theory of this form of emphysema, which, as I understand it, is as follows. A condition of interlobular emphysema is produced by rupture of the air vesicles beneath the pleura, leading to an accumulation of air in the connective tissue of the lungs, which infiltration extends to the mediastinal cellular tissue and thence to the subcutaneous tissue of the body, the cause of the rupture of the air vesicles being due to violent expiratory efforts with the glottis closed.

Professor W. Osler in his "Principles and Practice of Medicine" states that "air in the cellular tissues of the mediastinum is met with in cases of trauma..... it may extend to the subcutaneous tissues." In his work on diseases of children Rotch mentions that "as a result of a rupture of the walls of the alveoli air works through the interstitial tissue of the lung into the subcutaneous tissue." In Erichsen's Surgery one reads: "Hilton has described another form of traumatic emphysema that arises without any external wound. The air passes along the root of the lung into the middle and thence into the superior mediastinum; running up along the great vessels and the œsophagus it passes into the neck between the layers of the cervical fascia, which enter the thorax in front of the great vessels and behind

the œsophagus respectively. From these the carotid and subclavian vessels with their nerves derive sheaths, so the air now runs along these structures into the limbs and neck."

With regard to the explanation that in these cases the condition arises owing to the air obtaining an entry through lesions of the upper air passages, such as injuries to the lips, I would ask—for information—if such emphysema would become so extensive as in the case I have recorded. Moreover, bearing in mind with what frequency such injuries are met with during labour and in how many other cases they are possibly overlooked, ought not cases of emphysema during parturition to be much more common? In my case no lesions of the lips or mouth were observed nor was my attention drawn to any by the patient subsequently, and given such lesions would excessive efforts at expiration with the glottis closed produce the emphysema?

I am, Sirs, yours faithfully.

Gloucester, Nov. 5th, 1905. FRANCIS H. SPRAGUE.

THE ESSENTIAL CONDITIONS OF STEAM DISINFECTION.

To the Editors of THE LANCET.

SIRS,—I have read with great interest the correspondence that has been going on in your pages between Dr. J. C. Thresh and Mr. Wolf Defries. Allow me therefore to join in the discussion. The subject of steam disinfection is not only of paramount interest to the sanitarian but also to the surgeon, since the latter must be anxious to know which is the better, more thorough, and scientific agent for the effective sterilisation of dressings, &c.—steam under pressure or steam generated and given off at atmospheric pressure. And while the latter has come to be known as "current" steam, it has no exclusive right to that nomenclature, because pressure steam when passed through a disinfecting chamber in a "current" is a most powerful germicide by reason of its great penetrative powers.

Dr. Thresh and Mr. Defries are at variance with reference to the one important point: Is pressure or non-pressure steam the more reliable agent for disinfection? The whole subject is most engrossing and it is one in which I have taken a very keen and, I might add, practical interest. When I began about eight years ago to experiment with a steam disinfector I was an implicit believer in the virtues of non-pressure (current) steam. I had not the opportunity to go deeply into the question at that time on account of translation to my present sphere of labours. Still a devotee to non-pressure steam I devised, along with a fellow medical officer of health, a steam disinfector. This we intended to announce as a rapid acting non-pressure (current) steam disinfector. Koch's dogmatic assertion regarding the superiority of non-pressure over pressure steam had converted me to his view. But experiments repeated time and again have proved to me without the shadow of doubt that my faith in non-pressure steam was unjustified. And from that time I have been an implicit believer in the superiority of pressure steam. Moreover, when one hears that non-pressure disinfectors at certain altitudes above the sea level cannot raise the temperature inside the disinfecting chamber to boiling point, one begins to harbour additional misgivings. Up to a certain stage my experiments with non-pressure steam were fairly satisfactory. It must be emphasised that I was provided with a form of boiler capable of generating great volumes of steam, which were forcibly propelled through the disinfecting chamber at a velocity far in excess of that possible with the type of generator attached to the non-pressure apparatus in present-day use. This question of velocity in non-pressure disinfectors is a most material one and has been duly emphasised by Professor S. Delépine of Manchester. In a word, I gave non-pressure steam the very best opportunities it ever had to display its supposed powers of quick penetration. When called upon to penetrate blankets lightly folded upon themselves non-pressure (current) steam did its work efficiently as compared with pressure steam. But I must repeat the statement already made that I was forcibly propelling steam through the chamber. In ordinary circumstances steam in a non-pressure machine simply *flows* from end to end of the chamber. When I came to deal with flock mattresses folded upon themselves non-pressure steam was, to put it colloquially, "out of the running" with its rival pressure steam.

At this point let me add a most important reservation in order to clear away any ambiguity as to the proper use of pressure stream in connexion with a disinfecting chamber of any kind. Pressure steam may be employed for an indefinite length of time in fruitless attempts to kill micro-organisms inside a sealed chamber, *if the air in that chamber has not been in the first instance driven out.* This I have proved over and over again, not in a miniature apparatus but in a chamber 7 feet long and 3 feet 6 inches in diameter. Koch's house of cards as to the superiority of non-pressure (current) steam over pressure steam collapses over this very point. Koch declared in favour of non-pressure steam because he had not given pressure steam the opportunity to show its paces. He actually hampered pressure steam by requiring it to act in the presence of air left in the chamber. Yet that inaccurate observation—I think the adjective can be legitimately used—has laid the foundation of a mistaken faith in non-pressure steam. This point is one that deserves the very serious consideration of all surgeons who treat their dressings in pressure apparatus. As will be presently shown, to attempt to sterilise dressings without first discharging or expelling the air contents of the steriliser is to court grave risk of inefficiency. It was one of the most interesting points in my experiments to watch this phenomenon of air expulsion. When the doors of the disinfecting chamber were closed and steam turned on, the air, being expelled before the incoming steam, blew out one lighted match after the other. In the course of three minutes a faint cloud of warmish vapour appeared at the outlet. Finally, at the end of five minutes, when the chamber had been filled, steam came in full blast from the outlet. I have detailed these facts to demonstrate that for fully three minutes nothing but air issued from the chamber. Had that air been permitted to remain in the chamber it would have acted as a most effectual "buffer" to the steam as a disinfecting agent. In the presence of air, as has already been said, steam is a feeble disinfectant because air is a wretched heat conductor. Current (non-pressure) steam has shown an apparent superiority over pressure steam because the *current* pushed all air before it. Not until continental observers—and I must not forget Mr. Defries in this country—pointed to the absolute necessity for air expulsion in pressure apparatus did the superiority of pressure over non-pressure steam come to be understood and appreciated. As a result of my experiments nothing will now convince me that non-pressure steam can penetrate as efficiently and rapidly as pressure steam and that notwithstanding the powerful aid of a steam pump. Let me quote some of the experiments performed at a time when my mind was biased in favour of non-pressure (current) steam. The chamber in which the following tests were made was of 70 cubic feet capacity. It would be interesting to know the dimensions of the chamber in which tests of non-pressure apparatus were made, since the smaller the chamber the more rapid the flow of steam through it and the more favourable the conditions for non-pressure steam.

1. Non-pressure (current) steam. Anthrax spores were placed between the folds of a mattress folded upon itself and laid in the wire cage of the disinfecting chamber. Beside the spores was placed a thermometer set to ring an electric bell at 212° F. (100° C.). I give the actual times from my notes. From 2.36 till 2.41 steam was driven through the chamber to expel all air. At 3.1 the bell rang. At 3.21 steam was turned off and the chamber opened. The resulting test of the threads showed typical growth of anthrax on agar and in broth. It will be observed that 20 minutes elapsed ere the bell rang and that the spores were submitted to steam at 212° F. for 20 minutes with absolutely negative results. I need only to refer to Globig's experiments in support of this experiment of mine. He was unable to kill anthrax spores after exposing them to non-pressure steam for five and six hours. My own experiment was at a subsequent date verified by Dr. Buchanan of the Usher Institute.

2. Now let us turn to the pressure steam result. As before, the spores and thermometer were placed inside a mattress folded upon itself. Air was expelled from 1.57 till 2.2, when the exit was closed. At 2.7 the bell rang violently, the pressure in the chamber indicating 10 pounds on the gauge. At 2.9 the pressure had risen to 15 pounds, after which a current of steam was permitted till 2.19. The result was that at the end of ten days there was no growth of anthrax in any shape or form. In the former case 20 minutes elapsed ere the bell rang. With pressure steam,

on the other hand, the bell rang in five minutes. The effect of pressure steam on the vitality of the resistant spores is patent to everyone. Globig was able to kill anthrax spores in ten minutes. It was my desire to place the two varieties of steam on an equal footing with, as has been proved, disastrous results to the non-pressure rival. So much for Koch's postulate.

Lastly, let me give a graphic illustration to indicate where the fallacy has arisen as to the relative merits of pressure and non-pressure steam.

3. A thermometer to ring a bell at 212° F. (100° C.) was placed inside 16 folds of blanket and a current of non-pressure steam turned on at 2 P.M. At 2.9 the bell rang vigorously. Now let us observe the following result.

4. The thermometer was again placed within 16 folds of blanket (not the blanket heated by the former test) and steam admitted to the chamber and confined there. That is to say, there was no attempt made to get rid of the contained air. At the end of ten minutes, though the pressure of steam inside the chamber indicated 15 pounds, the bell remained quiescent. The pump was working vigorously and to avoid accidents to the chamber it was necessary to cut off steam or allow it to escape from the chamber. The latter precaution would have allowed a current of steam to flow through the chamber and air would have been expelled. This procedure would have defeated the end I had in view—namely, to prove that in the presence of air locked up inside the chamber even steam at a pressure of 15 pounds was incapable of penetrating an object readily searched through and through by non-pressure (current) steam. I can scarcely conceive anything more convincing. It is one thing to deal with steam confined under pressure, as this last experiment showed, but quite another to speak of steam confined under pressure, air having first been expelled. The whole science and art of true steam disinfection lies hidden in that statement. The one method is as inefficient as the other is certain in its action.

Dr. Thresh is inclined to draw a red herring across this controversy. He desires to point out that after all the infections with which a disinfector has to deal are caused by organisms that are easily killed. That is not the point, however. If non-pressure steam cannot penetrate, as I have proved it cannot penetrate, such objects as mattresses as well as pressure steam can, then it cannot be held to be as effectual a weapon in the hands of the sanitarian. Nay, more, we are aiming at standards nowadays, and before long we may arrive at a common understanding with regard to disinfectants. Why, then, should steam disinfectors not be the possessors of a standard of real efficiency?

I can safely say that never did non-pressure (current) steam receive a better opportunity to display its powers than was afforded it during my experiments. It came out of the ordeal a poor second. Let me conclude my rather lengthy communication with a suggestive observation. During my earlier experiments, some years ago, I enlisted the valued and kindly assistance of that eminent authority in bacteriology, Professor Robert Muir of the University of Glasgow. He prepared the test threads for me and undertook to examine them after they had been subjected to steam. My joy was great when a week after making my tests he wrote informing me that my results were apparently successful. The organisms had been killed. At the end of another three days, however, he declared that on looking at the tubes again he found that in one or two instances anthrax showed faint growth, as did bacillus subtilis. This point is a most significant one and impresses one with the necessity for displaying extreme care in the announcement of results.

I am really sorry to have trespassed so much upon your space but the subject is one that merits discussion. Far too much has been taken for granted in the past with regard to what steam can do under varying conditions, especially in the direction of disinfection and sterilisation. My own experience is a case in point.

I am, Sirs, yours faithfully,

WM. ROBERTSON, M.D. Glasg., D.P.H.,
Leith, Nov. 7th, 1905. Medical Officer of Health.

ADRENALIN IN THE TREATMENT OF HÆMOPTYSIS.

To the Editors of THE LANCET.

SIRS,—In reference to a note in a recent letter from your Paris correspondent and to an annotation thereon with the above title, may I say that I used adrenalin by direct intratracheal injection over two years ago. The patient, who was sent for treatment (for phthisis) by Mr. H. Ruskin Hancock of Leicester, had had one or two previous attacks and was much alarmed at its recurrence. I administered 40 minims of a 1 in 1000 solution in one and a half drachms of water three times at intervals of eight hours; the first dose checked the hæmorrhage immediately and it did not recur.

I am, Sirs, yours faithfully,

Southport, Nov. 5th, 1905. COLIN CAMPBELL.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

THE SECTIONS.

FRIDAY, OCT. 6TH.

FOURTH SECTION.

Tuberculosis and the Housing Question.

UNHEALTHY dwellings as a prominent cause of tuberculosis had already and frequently been denounced in the section, but now those present were called upon to discuss in detail this phase of the question. A report was presented by M. PAUL JUILLERAT, chief of the Paris sanitary office established to watch over domestic sanitation and to draw up the sanitary record of individual houses. Just as the police keep a criminal record of individuals, so does this department keep a record, it might almost be called a criminal record, of the preventable deaths that have occurred in the different houses. Thus is a sanitary history being gradually built up of each dwelling. In regard to tuberculosis this history conveys a more emphatic teaching than with respect to most of the other diseases, particularly as the observations now date back for some time, including the period when they were first organised by M. Louis Masson. The technical term used is "Le Casier Sanitaire des Maisons." That is the draw, case, or portfolio in which records are separately kept. Now judging by the record of the 11 years from 1894 to 1904 the mortality from tuberculosis at Paris differs according to the height of the apartment or tenement inhabited. Excepting the top, or garret floor, inhabited by servants and very poor people, the lower the floor the greater the mortality. In six bad areas comprising 1584 houses, inhabited by 59,081 persons, only 416 houses were free from the disease during the 11 years. All the other transmissible maladies caused a mortality of 1·81 per 1000 of the population; the mortality from tuberculosis in these areas was 8·25 per 1000. During the 11 years 101,496 deaths from pulmonary tuberculosis occurred in 39,477 houses. Of these houses 5265 were inhabited by 426,676 people and 38,009 of them died, but of these deaths 11,500 occurred in only 830 houses, which, however, had a population of 106,300. Thus it will be seen that tuberculosis is localised. There are certain dwellings where it is always present. It has also been noticed, and this is very important, that these contaminated buildings affect fatally other houses in their immediate neighbourhood, though these latter do not present the same serious sanitary defects. The sanitary defects were all alike; narrow streets, narrow courts, no air, and no direct sunlight, and the reporter concluded that tuberculosis was essentially "a disease of obscurity." Then two plans were submitted. One an area to the east of the Boulevard Sebastopol included the celebrated slum street, the rue de Venise and the historic rue Quincampoix, where John Law carried out those financial speculations which were to France what the South Sea Bubble was to England. In this area 70 per cent. of the ground is covered with buildings. There are 281 houses with 9715 inhabitants, and in only 30 of these houses have there been no deaths from tuberculosis during the 11 years. The general annual death-rate in some of these houses is equal to 42·63 per 1000 and the deaths from tuberculosis alone are equal to 124·50 per 10,000. The other plan comprises an area in the Quartier de l'Europe, a little above the Gare St. Lazare. Here 54 per cent. of the area is built over. There are 191 houses, with 5705 inhabitants; deaths from tuberculosis have occurred in 75 of these houses and the death-rate from this cause is equal to 11·90 per 10,000 annually. Thus in the one district the deaths from tuberculosis are ten times more frequent than in the other. The kitchens are denounced as the chief culture ground for Koch's bacilli. Here there is little or no ventilation, with

much heat, damp, and obscurity, for most kitchens give on to very small courts or shafts. The latter are sometimes six storeys high and only some six feet wide. The porter's lodge is also a place where very little air or light can penetrate and which the direct rays of sunshine never reach. As a contrast to this state of affairs it is stated that whereas in London there is an average of eight inhabitants per house, in Paris it is 35 inhabitants per house. Nor have even the most recent regulations in regard to building enforced the much-needed improvements. Houses 18 metres high are still built in streets that are only 12 metres wide and the back courts into which bedrooms are ventilated are only six metres wide and in these modern houses passages, ante-chambers, and closets ventilate into wells or shafts that are but six feet in diameter though about 100 feet in height. The kitchens, however, are no longer allowed to ventilate into these shafts but must give on to courts that are at least 23 metres square, three metres wide, where the house is 18 metres high. So the kitchens will still be obscure; the sun's purifying rays will not be able to penetrate but it will not be quite so bad as in the past. The reporter concluded that where the house sanitary records prove that there is an exceptionally high death-rate the law should sanction the expropriation of the owner or owners and the rebuilding of the house or area. A good deal also was said as to the escape of carbon monoxide into dwellings. It appears that during the last eight years the municipal council of Paris has placed in the hands of its inspectors the means of testing the smoke flues. The result is that two-thirds of the flues examined have been found in a dangerous condition. This may be the cause of many cases of anæmia which, while distressing in themselves, create a predisposition for tuberculosis.

Mr. KEITH D. YOUNG (London) presented another report agreeing with the general principles of the above and quoting a great mass of statistics to prove that there were more cases of tuberculosis in back-to-back houses. He insisted that a larger cubic space counted for nothing if the ventilation and lighting were bad. Plans were shown of French and English houses built for flats or tenements where the ventilation was inadequate. The question as to the amount of space necessary before and behind dwellings was also discussed. He quoted Sir Shirley Murphy's valuable tables as to the width of streets required for six hours of sunshine at all angles to the meridian and at the latitude of London. Mr. Young agreed with M. Emile Trélat that the street should be one and a half times as wide as the height of the houses and said that this, instead of being a dream, existed in some of the streets of London.

At the commencement of the general discussion following upon these reports Professor L. LANDOUZY warmly congratulated the Paris municipality upon having instituted the Casier Sanitaire des Maisons (Sanitary Record of Houses), which could be consulted in so rapid, commodious, and simple a manner, and which gave the fullest information. In regard to the various faulty forms of construction, it was necessary to emphasise the danger of poisoning through the escape of carbon monoxide. Persons living in apparently healthy houses suffered from giddiness, indigestion, headache, nausea, weakness, and loss of appetite. Their medical advisers attributed this to worry, overwork, unsuitable diet, neurosis, or organic disease of the digestive organs, but every sort of treatment failed except when the patient was sent to live elsewhere. But it was not the country or seaside that constituted the remedy; the cure was due to the fact that the patient was removed from his own house where carbon monoxide had been poisoning him all the time. Professor Landouzy therefore hoped that the campaign against slow combustion stoves and leaking flues or chimneys would be carried forward with the utmost vigour; they were one of the predisposing causes of tuberculosis.

M. ALBERT-LÉVY, director of the chemical department at the Montsouris Observatory, which as an observatory is to Paris what Greenwich is to London, explained that together with M. Pécoul he had made elaborate analyses of atmosphere likely to be contaminated by carbon monoxide. He found that a great number of the apparatus now in use for lighting and warming houses produced toxic effluvia. Even a mere trace of carbon monoxide was dangerous, especially in a workshop.

M. MARIE DAVY, the director of the Montsouris Observatory, showed a diagram where one line gave the number of windows per inhabitant in each of the 20 arrondissements of Paris and another line gave the average death-rate from tuberculosis during five years in these same districts. This clearly showed that the death-rate was highest where there was the smallest proportion of windows. He concluded by urging that the tax on doors and windows should be abolished.

M. AUGUSTIN REY, a distinguished French architect, dealt technically and at length with the backyards, urging that they must be placed in direct connexion with the street. If the street door, or *porte cochère*, was closed, as was generally the case at night, then the air could not penetrate from the street to the yard and therefore the courts ceased to act as ventilators.

Professor HENSCHEN (Stockholm) submitted some statistics showing that in the Swedish capital in districts where there were 100 bedrooms for every 100 inhabitants the annual mortality from tuberculosis was 14 per 10,000. On the other hand, where there were only 100 bedrooms for every 340 inhabitants the proportionate mortality was 38 per 10,000.

Dr. RÉNON remarked that the action of the dwelling on the poorer classes was difficult to determine, because there were many other causes at work, such as privations, work at unwholesome occupations, &c. But by studying, for instance, the condition of fairly prosperous tradesmen it was easier to obtain a comparison. Some had shops in very narrow dark streets, others in broad streets, and sometimes the best trade was done in the less wholesome streets. Dr. Rénon then went on to give instances to illustrate the fact that though prosperous and equally well fed there was more tuberculosis among tradesmen in the narrow streets, notably in streets near the Bastille. He therefore urged the necessity of maintaining open spaces in large towns.

Dr. JULIEN NOIR (secretary of the Paris Medical Syndicate or Union) described his investigations in the St. Séverin quarter, an extremely poor quarter where there is one drink-shop for every 64 inhabitants and where the deaths from tuberculosis are seven times more numerous than those due to all the other infectious diseases. Out of 9000 inhabitants 786 died from tuberculosis in 11 years and yet during the same period there were only 22 deaths from typhoid fever. It was the narrowness of the streets and the want of sunshine rather than the overcrowding that did the most mischief. There existed in the district houses which were such hotbeds of disease that they should be pulled down at once.

Dr. BECHER (Berlin) pointed out the efforts made in Germany to send debilitated adults and as many children as possible to spend the day in forests or parks on the outskirts of the large towns. By such means they endeavoured to counterbalance the want of air within the town. But it was necessary to rebuild and to build better. The improved health of the population would more than cover by the improvement in the work which they would do the cost of such undertakings.

M. BLUZET, who is employed in the sanitary department of the French Ministry of the Interior, pointed out that what was now needed was the support of public opinion to strengthen the Government against the pressure brought to bear by the house owners who feared that sanitary improvements would involve them in financial loss. Evidence was now being collected that would amply justify the condemnation and destruction of a great number of very unhealthy houses. But unfortunately the victims themselves failed to complain. The people should be educated to appreciate the dangers to which they were exposed. The Government was willing to act but must have the support of public opinion. M. Masson had some time ago proposed that lessons of hygiene should be given in the public schools. The teachers replied that this was already done; it was a question, however, whether the masters themselves really knew much about the subject. Lessons in sanitation should be given in the training colleges, the Écoles Normales, where the teachers were educated. In time public opinion would be roused.

Dr. LANCRY (Dunkirk) expatiated on cottage dwellings with small gardens as the best protective measures and urged that the working classes should be induced to live in the outskirts of the large towns where there was space for such gardens.

On the proposal of M. EMILE CHEYSSON, Member of the Institute of France and President of the French National League against Alcoholism, the following motion was adopted:—

1. Municipalities should adopt the necessary measures to encourage the use in the dwellings of the poor of an abundant and cheap water-supply.

2. To combat the tendency to the production of tuberculosis by overcrowding it is desirable to augment the number of workmen's gardens and of public gardens, to increase the open spaces, to plant trees in open spaces of the large towns, and to resist all that tends to increase the crowding into towns while encouraging a return to the open fields.

On the proposal of M. CASIMIR-PERIER, a past President of the French Republic, of M. LÉON BOURGEOIS, formerly Prime Minister, of Professor LANDOUZY, president of the section, and of M. PAUL STRAUSS, Senator, the following motion was adopted:—

Considering the important results obtained in certain countries by their legislation for the protection of public health the International Congress on Tuberculosis held at Paris expresses the desire that the law should confer on the public authorities the right and the means of expropriation in respect to all dwellings that are dangerous to the health of their inhabitants and that the indemnity to be given shall be estimated according to the sanitary value of the dwelling.

The motions proposed by the reporters, M. JUILLERAT and Dr. BAUME, were then submitted and adopted. They were as follows:—

1. For France and all other countries where this form of taxation exists the tax on doors and windows should be abrogated and every encouragement given to individuals to open out in the walls of their dwellings the largest possible windows for the purpose of giving air and light to the inhabited rooms.

2. In all towns (possessing at least 20,000 inhabitants) there shall be instituted an investigation, similar to that undertaken by the town of Paris, so as to show the distribution of tuberculosis in the houses and to seek out the laws that govern this distribution. It is desirable that in all towns a sanitary history of each house should be drawn up.

3. The public authorities should concern themselves, when new streets are built, so as to insure that they shall be so orientated as to receive on both sides, at least for a few hours every day, the direct rays of the sun.

4. Henceforth the width of the streets and the height of the houses should be so regulated that the rays of the sun may for at least a few hours per day shine upon their front walls from the foot to the summit.

5. The minimum width of the interior or back courts should be calculated in the same manner and give the same results as in the case of the width of the streets.

6. No inhabited room, including kitchens, workshops, and porters' lodges, shall receive light or air otherwise than by openings giving directly into streets or yards having the dimensions indicated above and by windows the area of which shall be in proportion with the surface of the room.

7. All the plans and the disposition of the houses should be studied so that the ventilation of all the rooms shall be effected in a permanent manner and so that no unwholesome emanation can invade the inhabited apartments; notably the warming apparatus and the smoke flues should be so constructed that no carbon monoxide can enter the inhabited parts of the building.

8. In no case should the occupation of a room be tolerated, even if it be only during the daytime, when such room is not lighted by the natural light of day.

9. All places that have been occupied by a tuberculous patient must not be let or occupied by another person till such habitations have been carefully disinfected.

10. No court or backyard destined to give light and air to inhabited rooms must be partially or completely covered over, at whatever height, by glass panes or any other sort of covering.

Tuberculosis in the Colonies.

The next point raised but which did not occasion much discussion was the spread of tuberculosis among the natives in French colonies. Dr. KERMORGANT presented a report urging that though some natives of themselves had taken protective measures and isolated the sick, it was the duty of the central or home Government to enforce such precautions.

In the course of the discussion some advocates of total abstinence sought to denounce not alcoholism but alcohol which led another speaker to retort by attempting a defence of absinthe. Finally, the PRESIDENT had to stop the speakers by insisting that the Congress could not discuss whether alcohol was wholesome and constituted an article of food or not. There was to be an International Congress on Food and there such a matter might be debated. But the present Congress dealt only with tuberculosis and it was only as a cause of this disease that the abuse of alcohol could be discussed.

Tuberculosis in Women's Workshops.

A report was next taken from Mme. J. THIBAULT, one of the French factory and workshop inspectors, on tuberculosis in the female workshops of Paris. Mme. Tribault denounced the overcrowding, overwork in, and inefficient ventilation of these places, as also the habits of the workwomen which aggravated the danger—for instance, the biting and wetting of the thread to pass it through the eye of the needle. She urged that spittoons and not handkerchiefs should be used and that the windows should be thrown wide open during the absence of the workers at meal times. Also, she pointed out that the law could not fix absolutely the space needed, as this must differ according to the character of the occupation. Efficiency of ventilation was much more important than space.

Tuberculosis in the Army and Navy.

There then followed a short debate on Tuberculosis in the Army and Navy. In a report dealing with the army Dr. KELSCH, French army medical inspector, said he had experimented with the dust collected in barracks at Lyons and found it innocuous. He thought that young soldiers were impregnated with latent tuberculosis before they joined the ranks and when the disease developed into an acute stage this was due to other causes than infection.

Dr. AUFFRET, medical inspector of the French navy, also thought that many of the sailors were infected with tuberculosis before they joined the navy. At the same time the nature of the work, especially for the stokers and engine-room men, was such as to produce chills, coughs, and other predisposing conditions. Very great improvements had, however, been accomplished and it might be said that the ventilation of the sailors' quarters on board a modern man-of-war was about perfect. He urged that greater care should be taken in the recruiting department to prevent persons with latent tuberculosis being enrolled in the service.

Dr. TARTARIN (Mentone) said a word on behalf of the mercantile navy and quoted statistics showing that tuberculosis and illness generally were more prevalent among the crews of merchant ships than in those of the navy. He urged that the sailors should be better fed and should be given more wholesome quarters on board and that greater efforts should be made to prevent intemperance in the use of alcohol.

Tuberculosis and the Disinfection of Dwellings.

The last official report prepared for the section was presented by Dr. A. J. MARTIN, general sanitary inspector of the Paris houses. It dealt with the question of disinfection where there were cases of tuberculosis. This should be practised not merely after the death of a patient but also at various intervals during the progress of the disease. Unfortunately, the law did not insist on such disinfection. The reporter moved the following proposition, which was unanimously adopted:—

1. It is desirable that it should be the general practice to notify all cases of advanced tuberculosis.

2. The means of disinfection taken in cases of advanced tuberculosis should be in keeping with the methods and with the aid of the processes that have been found to be most effective.

3. The administrative ordinances or, if necessary, the legislative enactments which shall sanction and insure the practice of disinfection should be promulgated with the least possible delay.

This terminated the work of the section which was concluded somewhat early on the Saturday morning. It is important to note that all the motions carried by the section were read out at the general meeting of the entire Congress and adopted without opposition. Thus the other sections confirmed the work of the Fourth Section, in spite of the great length, number, and far-reaching consequences of its resolutions. After this the closure of the Congress was pronounced as already described and it will be admitted that a great amount of work was done considering the limited time at the disposal of the sections.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday Fund.

THE annual meeting of the friends and supporters of the Liverpool Hospital Sunday Fund was held in the town hall on Nov. 6th. The Lord Mayor presided over an influential attendance. The secretary, in submitting the report, said that the committee, while regretfully acknowledging for the second year in succession a small diminution in their receipts, felt that upon the whole matters might have been less satisfactory. This year, though the weather was propitious, the depression of trade was greatly felt in January and a decrease of £189 17*s.* 11*d.* was the result, the total sum collected being £6354 10*s.* 2*d.* With the balance from 1904 the sum of £6160 was set aside for distribution. This, with £8590 from the Hospital Saturday Fund, was paid to a joint account, making a grand total of £14,750, a grant only once exceeded since the Fund was started. The method of distribution was the same as last year. The plans recently adopted of making an interim distribution had been much appreciated by the treasurers of the various medical charities. The Hospital for

Cancer and Skin Diseases has been restored to the list, while the claims of the Samaritan Hospital for Women also have been recognised. The committee again desired to thank the Welsh committee, formed in the city for the purpose of fostering an interest in Liverpool medical charities in the churches of North Wales, for a donation of £100. The committee had had the date of Hospital Sunday again under consideration. In response to a circular issued to all the churches contributing to the Fund replies were received from 213, of which 110 favoured the present date, 52 preferred the second Sunday in March, 33 a Sunday in June, 18 were indecisive, while 140 sent no reply. In the circumstances the committee could not recommend a change of date. The Lord Mayor, on behalf of the city, desired to acknowledge the services of those who had worked for the Fund. The Rev. Dr. John Watson (Ian Maclaren) had sent in his resignation as a member of the committee. As Dr. Watson had not yet left Liverpool and would not do so for some time the committee had asked him to remain a member of the committee while he was resident in the city.

The Duke of Westminster's Gifts to Charities.

The Duke of Westminster intends to give from the Eaton Hall and garden takings in 1905 the sum of £850 to various charities which include: Chester Infirmary, £450; Parkgate Convalescent Home, £50; Alexandra Hospital, Rhyl, £50; Men's Convalescent Home, Rhyl, £25; Women's Convalescent Home, Rhyl, £25; and the Convalescent Home for Women and Children, New Brighton, £20.

Nov. 7th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

The Fees of Colliery Surgeons in Northumberland.

WHAT is practically a climax has been reached in the long-standing dispute between the Northumberland miners and their medical attendants. In a report issued by the miners' committee on Oct. 26th the whole ground of the dispute is gone over from their point of view. The arguments used are the same as have so often been brought forward before, the gist being that the surgeons' fees are arranged at a fixed rate, whereas the miners' wages are subject to the operations of a sliding scale the variations of which depend on the state of trade. For instance, reductions in the men's wages have been made since the period in 1900 when the surgeons received an increase from 6*d.* to 9*d.* per fortnight for each member. The miners therefore claim that as their wages have fallen their payments to the surgeons should be correspondingly reduced. Various suggestions to meet the difficulty have been mooted in the county. One proposal which meets with a good deal of favour is to reduce the fees by 1*d.* per fortnight per member. Another is the formation of a medical association under the control of the Northumberland Miners' Association which would employ its own medical men. The Northumberland Miners' Association has, however, arrived at the following unanimous conclusion: "That having carried forward the negotiations with the doctors as far as they can, and, as the doctors absolutely refuse to either revert to the contributions which obtained prior to 1900 or to suffer any reduction whatever in the present rate of payment, they ask the county to carefully consider the position as disclosed, and suggest that collieries should forward resolutions on the subject in time for the council meeting to be held in November." The committee concludes by suggesting that the best policy to pursue in the circumstances is to give notice that on and after the "pays" beginning January, 1906, the contributions shall be what they were prior to 1900. The feeling among the medical men concerned is almost unanimously in favour of resisting any reduction whatever. To meet possible contingencies a defence fund has been started (under the management of the North of England branch of the British Medical Association, which has taken over the old Northumberland Medical Association) and all the medical men engaged in colliery practice are to be advised (1) to refuse to take any reduction; and (2) in the event of their regular payments being stopped to attend only those patients who will pay the fees usual in private practice or who will subscribe to private clubs the fees of which are the same as those previously paid by the general body of miners (i.e., 9*d.* per member per fortnight).

Miners' Subscriptions to the Royal Infirmary, Newcastle-upon-Tyne.

In the monthly circular of the Northumberland Miners' Mutual-Confident Association for October there is a paragraph dealing with the financial support accorded by the association to the Royal Infirmary, Newcastle-upon-Tyne. It is pointed out that in the earlier days of the association its contributions more than covered the cost thrown upon the institution by those members who availed themselves of its services. This is not now the case but the executive committee, being anxious to attain to its former enviable position, has decided to increase its subscription to the infirmary by £100 a year. The following figures indicate the present position of the association with regard to support of the infirmary. In 1904 there were 245 Northumberland miners among the in-patients. The cost for maintenance was £3 13*s.* 6*d.* each, a total of £900 7*s.* 6*d.*; the Miners' Association contributed £550, and there was sent directly from the collieries £37 1*s.*, a total for the year of £587 1*s.* The expenditure on these miners, therefore, exceeded the amount received from the association by £313 6*s.* 6*d.*

Appointment of Assistant Surgeon at the Royal Infirmary, Newcastle-upon-Tyne.

At the meeting of governors held on Nov. 2nd Mr. John Clay, M.B., B.S. Durh., F.R.C.S. Eng., was appointed assistant surgeon in place of Mr. H. B. Angus who was recently elevated to the full surgeoncy. There was no other candidate. Mr. Clay has held the appointments of house surgeon and senior house physician and since 1897 that of surgical registrar. He has also twice held the post of demonstrator of anatomy at the Durham University College of Medicine, which he at present retains.

University of Durham.

In future matriculated students in the Faculty of Medicine who desire to take the degree of Bachelor of Science will be excused the study and examination in mathematics and will be allowed to take human anatomy as an auxiliary subject, provided that they qualify for the degree with human anatomy and human and animal physiology included among their final subjects. Their studies and examinations in physics, chemistry, natural history, anatomy, and physiology for the degree of B.Sc. will be allowed to count as studies and examinations for the degree of M.B. also.

Appointment of a Medical Officer of Health of the County Borough of Tynemouth.

At a recent meeting of the Tynemouth town council Mr. Leslie Milburn, M.R.C.S. Eng., L.R.C.P. Lond., D.P.H., was unanimously appointed to fill the vacancy caused by the resignation of Mr. J. Edward Gofton. The salary commences at £300 per annum, rising by annual increments of £25 until it reaches £400. Mr. Milburn's professional training was received at the Middlesex Hospital where he worked for a time as assistant bacteriologist. Recently he has been assistant to the county medical officer of the West Riding of Yorkshire.

Nov. 7th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Water-supplies in Monmouthshire.

IT has been confidently predicted that the prosperity of the Monmouthshire coalfield known locally as the Eastern and Western valleys will be not less during the next 30 years than that which has been attained in the Rhondda valleys of Glamorganshire during the past 30 years. The very rapid growth of the latter district without any proper scheme of drainage and with an inadequate water-supply was followed, as might be expected, by a high death-rate and an abnormal amount of sickness until the sanitary authority took in hand the provision of remedial measures. There is some evidence that the lessons learned in the Rhondda valleys are being taken to heart in Monmouthshire. A combined sewerage scheme with an outfall in the Bristol Channel is now being carried out and at the last meeting of the county council the question of a water-supply for the industrial portion of the county was under discussion. The county surveyor reported that in some districts the supply was most inadequate and he advised that a comprehensive scheme

providing for the anticipated requirements of the next 50 years should be considered. There was a disposition on the part of some members of the council to throw upon the district councils the responsibility of providing a supply but in the end the question was referred to the Parliamentary and sanitary committees. The county council has not yet appointed a medical officer of health and has therefore no responsible adviser in public health matters, so that it is difficult to understand how the committees named will be able to consider the question from the point of view of its bearing upon the health of the districts concerned.

The Medical Officer of Health of Chipping Sodbury.

The Chipping Sodbury rural district council has passed a resolution which may be taken as one of dissent from the proposal of the Local Government Board to make an Order under Section 286 of the Public Health Act, 1875, forming a combination of districts, to include Chipping Sodbury, for the purpose of appointing a joint medical officer of health. In view of this dissent it will now be necessary for the Board to make a provisional order so that the matter cannot be finally settled until Parliament meets.

Dairies, Cowsheds, and Milkshops.

During the past few months the Local Government Board has drawn the attention of a large number of sanitary authorities in various parts of the country to the necessity of making regulations under the Dairies, Cowsheds, and Milkshops Orders. A return of the response to this appeal from the Board will be of considerable interest and an added value will be given to the return if it includes the reasons for not making regulations which have been given by those authorities which have refused to accept the advice of the Board. In Herefordshire the Bromyard, Leominster, and Weobley rural district councils have refused to make any regulations because they "have so few cowsheds they consider regulations are not necessary." The Hereford and Dore rural councils have adopted the model regulations of the Local Government Board and the Board has given permission for the inclusion of an additional regulation for preventing the contamination of milk. It provides that the milk-seller—

Shall not after becoming aware that any cow belonging to him or under his care or control is affected with such disease of the udder as shall be certified by a veterinary surgeon to be tubercular, keep, or permit to be kept, such cow in the same dairy, cowshed, or other place in which any healthy cow is kept for the purpose of supplying milk for sale, unless completely isolated from such healthy cow.

Devizes Joint Isolation Hospital.

The isolation hospital which has been erected jointly for the Devizes urban and rural district councils, was formally opened on Oct. 31st, in the presence of a large gathering. The hospital contains 22 beds in the main building and, in addition, there is a small pavilion for cases of diphtheria. The cost of the undertaking has been £10,269.

Nov. 7th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Election of Lord Rector of the University of Edinburgh.

ON Saturday last the students of the University of Edinburgh elected the Right Hon. R. B. Haldane, K.C., M.P., as Lord Rector of the University. He was returned by a majority of 30 over his opponent, Lord Dunedin. He succeeds Sir Robert Finlay, who was returned at the last election by a majority of 294 over Sir Edward Grey. In the evening the usual torchlight procession was held.

Opening of the Winter Session of the Medical Societies in Edinburgh.

With the beginning of November the medical societies open their winter session. The Royal Medical Society was opened by Mr. A. W. Mayo Robson with an address on Pancreatitis; the Medico-Chirurgical Society was addressed by its retiring President, Professor J. Chiene; the Pathological Club began its session without special display; and the Obstetrical Society will hold its first meeting on Nov. 8th.

Appointment of Assistant Ophthalmic Surgeon to the Royal Infirmary, Edinburgh.

Dr. A. H. H. Sinclair has been appointed assistant ophthalmic surgeon to the Edinburgh Royal Infirmary. The vacancy was caused by Mr. G. A. Berry having completed his term of office as surgeon, the promotion of other members of the staff leading to a vacancy amongst the assistant surgeons.

The University of Edinburgh General Council and the Election of Assessors.

The members of the general council of the University of Edinburgh are having the unusual experience of a contest for the office of assessors to the University court. The two assessors, whose term of appointment had expired, were Mr. Campbell Lorimer, advocate, and Dr. David Fowler Lowe, headmaster of George Watson's College, Edinburgh. They were eligible for re-election but a third candidate, in the person of Mr. John A. Trail, W.S., was brought forward and as a poll was demanded the election is made by voting papers and the date for returning them has been fixed as Nov. 17th. If members have not received voting papers they can have them by applying to Mr. T. Gilbert at the University.

A Dentistry Dispute.

At Kilmarnock sheriff's court a decision was given last week in an action at the instance of a surgeon-dentist of Glasgow against his apprentice for £100 as penalty for alleged breach of agreement under apprenticeship in the pursuer's service. It appears that some time after entering upon indenture of apprenticeship the defender made an agreement with the pursuer whereby he was to be allowed to attend classes for his first professional examination. These he attended and, having passed, he entered into another agreement under which he was to be allowed to attend classes for his second professional examination. He attended part of these but it was found that by a new regulation he required to attend a course of anatomy extending over ten months and the pursuer refused to allow him to do so, whereupon he left the pursuer's service. The sheriff was of opinion that in entering into such an agreement the pursuer was put upon his inquiry as to the meaning of the permission which he granted to the defender and that having omitted to specify any period of time he must be held to such a period as the circumstances plainly indicate. The sheriff held that the pursuer had not carried out that agreement and had no title to demand payment of the penalty sued for. He therefore assoilzied the defender, but as he thought blame attached to both sides from the misunderstanding which had arisen he granted no expenses.

Two Memorials at King's College, Aberdeen.

On Oct. 28th, in King's College library, the Geddes Memorial Medallion and the Professor Fyfe Memorial Window were unveiled by Professor W. Stephenson and Mr. W. Paterson respectively, Principal Lang accepting charge of both memorials. The medallion, which has been placed in the south transept of the library, devoted to the Geddes Memorial Library, consists of a life-size portrait in bas-relief, with an architectural *encadrement*, all of the finest statuary marble, and is the work of Mr. Pittendrigh MacGillivray. The complete harmony that exists between the medallion and its architectural setting and the importance of the part played by the latter in heightening the effect of the sculptured medallion are remarkable. "The portrait, head and bust—the head in left profile, facing the light—is excellent as a likeness and has been sculptured with fine feeling. While there is a certain magnificence in the design of the figure that suggests, not unfaithfully, a scholar of the Renaissance, the gracious dignity of the intellectual head, slightly bent forward, recalls vividly the late Principal." The window which has been erected to the memory of Professor Fyfe is the first of several stained-glass windows which are intended to perpetuate the memory of professors in the University and is a beautiful piece of work. The figure represented is that of an old man seated among his books and symbolises bibliography. The window is the work of Mr. Douglas Strachan and displays very skilful draughtsmanship and colouring. It bears the following inscription: "In memory of John Fyfe, M.A., LL.D., Librarian 1857–1876, Professor of Moral Philosophy 1876–1894, erected by his students and other friends." On another portion of the window are the words: "Wisdom hath builded her house. She hath hewn out her seven pillars." This refers to the scheme for placing seven windows in all in the library.

Quatercentenary of the University of Aberdeen.

The Latin letter of invitation to universities and other learned bodies has been drafted by Professor W. M. Ramsay

and will soon be dispatched. A list of about 300 such invitations, prepared by Mr. P. J. Anderson, the University librarian, has been under the consideration of the invitations committee and it has been thought desirable, except in nine instances, to invite only one delegate from each. The nine favoured institutions, the number of invited delegates from which will be left indefinite, are the Universities of St. Andrews, Glasgow, Edinburgh, Oxford, Cambridge, Dublin, Paris, Bologna, and Tokio. All the members of the senatus have been requested to submit lists of distinguished individuals whom they consider should be specially invited.

Nov. 7th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Royal University of Ireland.

A SPECIAL meeting of the standing committee of the Royal University was held in Dublin on Nov. 3rd. The Earl of Meath (Chancellor of the University), who presided, said that it was his duty to summon a meeting of the committee for the purpose of considering what action it should advise the Senate to take with regard to the serious incident which occurred during the conferring of degrees on Oct. 27th. In the presence of the Chancellor, the Vice-Chancellor, and the Senate the platform reserved for the Chancellor, the Senate, and distinguished graduates was forcibly invaded by a mob, presumably composed of undergraduates or students preparing for the University examinations, who, brandishing sticks and taking possession of the organ gallery, prevented the eminent musician to whom the honour of playing the National Anthem had been entrusted by the Senate from doing his duty. It was also stated that after the retirement of the Senate their seats were occupied by the triumphant mob, one of whom attempted to address his fellow students and the public from the Chancellor's seat. It was difficult to conceive a more flagrant exhibition of disloyalty defiantly and successfully carried out within university walls. The outrage ought in no way to be compared to the noisy, silly, but often good-humoured interruptions which were too frequently customary not only in that University but elsewhere. Lord Meath further said that in certain circumstances he would find it inconsistent with his inclination and his duty to continue his connexion with the University. Certain undergraduates were summoned to appear before the committee, but it is a difficult legal question whether the Senate of a non-teaching University can exercise disciplinary powers over its students between the periods of the examinations. The whole Senate is summoned to meet on Nov. 14th and it is rumoured that if some decided action is not adopted many resignations may take place. These riotous proceedings are probably not of much essential importance in themselves, but they undoubtedly place a good many Irish university undergraduates in a most discreditable position.

Health of Belfast.

At the usual monthly meeting of the corporation of the city of Belfast held on Nov. 1st, it was reported that between Sept. 17th and Oct. 21st last 284 cases of zymotic disease had been notified—namely, 84 cases of typhoid fever (a considerable increase), 79 cases of scarlet fever (with only one death), 54 cases of simple continued fever, 37 cases of erysipelas, 20 cases of diphtheria, nine cases of membranous croup, and one case of puerperal fever. The death-rate from all causes was 16·6. The zymotic death-rate was less by one-half than in the corresponding period of 1904, but it will be interesting to know what is the cause of the fresh outbreak of typhoid fever.

Royal University Graduates' Association.

At the annual meeting of the Royal University Graduates' Association held in Belfast on Nov. 3rd, at which there was a large and influential attendance, Dr. John Campbell was unanimously elected President, in room of the late Dr. W. A. McKeown. The following Vice-Presidents were elected:—Dr. John Walton Browne, Dr. Joseph Nelson, Rev. F. Petticrew, Rev. Canon Stephenson, Dr. R. J. Purdon, Mr. Conway Scott, Dr. J. King Kerr, Lieutenant-Colonel Moorehead, Dr. T. Sinclair Kirk, Mr. Thomas M. Maguire, Dr. Charles Porter, Mr. James S. Reid, Mr. F. H. O'Donnell, Mr. A. L. Horner, Mr. R. J. McMordie, Mr. M. Wylie, Dr. John S. Morrow, Dr. James Graham, and Dr. R. W. Leslie. Mr. J. S. Reid was elected honorary treasurer. The honorary secretaries elected were Mr. B. Allen, Mr. H. Turnbull, and Dr. A. Fullerton. On the motion of Dr. Leslie, seconded by Dr. Morrow, the following were elected on the council: Mr. J. Finnegan, Dr. W. M. Killen, Dr. W. B. McQuitty, Dr. C. Kevin, Dr. Robert Campbell, Mr. L. Walkington, Mr. J. W. Storey, Dr. W. A. Wadsworth, Dr. W. Gibson, Mr. Arthur Williamson, Dr. J. D. Williamson, Dr. John McCaw, Dr. J. Simpson, Dr. John W. Taylor, Dr. Isaac A. Davidson, Mr. J. G. Whittaker, Mr. H. Seaver, Dr. W. Dornan, Dr. W. Milligan, Dr. E. Sterling, Mr. W. H. Browne, Dr. David P. Gaussen, and Dr. R. C. McCullagh. The new President, Dr. John Campbell, gave an interesting address upon the difficult subject of the Irish universities, the address being entitled "The Failure of Non-Sectarian Education in Ireland; its Cause and Remedy." At the conclusion of Dr. Campbell's address the following motions were carried:—

1. That we have observed with satisfaction the statement recently made by the Prime Minister that the demand for the establishment of a sectarian university is losing force and that no Government in the present state of public opinion could introduce a Bill for that purpose; and accordingly, with renewed confidence, we reaffirm our determination to oppose the application of State funds, either directly or indirectly, to the support of a sectarian university or a sectarian college.

2. That the fact of the Royal University now possessing a body of 6000 graduates justifies a demand that the present system of governing the University through a senate the preponderating majority of whom are appointed by the Crown for life—not as being qualified for the duties of the office but as representing the churches to which they belong—should be altered; that the Crown nominations should be given to qualified men who will attend to their duties; that these nominations should not exceed one-third of the total number; and that the graduates, as being the persons most competent to direct university affairs, should elect the remaining two-thirds.

3. That we condemn in the strongest manner the abandonment of the Queen's Colleges of Cork and Galway recently proposed by Sir West Ridgeway. We consider that these Colleges, in view of the subsidised competition of the Jesuit College in Dublin, are underendowed and, having regard to the increased requirements of modern education, we demand that the Colleges of Cork and Galway, as being the only sources of liberal and impartial culture which exist in the south and west of Ireland, should be generously supported.

4. That recognising the fact that the Queen's University and its colleges were secured as non-sectarian institutions through the efforts of a brilliant Roman Catholic layman, Sir Thomas Wyse, we have great satisfaction in observing a resuscitation of the spirit which animated him in his work; and, as university men who support non-sectarianism in secular education as in all secular affairs, we give our heartiest sympathy to those Roman Catholic laymen who are now working for the university reform on lines similar to those designed by that great Irishman, who was the far-seeing pioneer of non-sectarian constructive effort in all departments of secular education in Ireland.

Royal Victoria Hospital, Belfast.

The following have been appointed resident medical officers at the Royal Victoria Hospital, Belfast:—Dr. C. G. Robb, Dr. T. Phillips, and Dr. J. Moffett.

Nov. 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Fulminant Cerebral Rheumatism.

At the meeting of the Hospitals Medical Society held on Oct. 27th M. Gandy and M. Bornait-Legneule gave an account of the case of a man, aged 21 years, who in the course of a third attack of articular rheumatism suddenly developed cerebral symptoms. Delirium and ataxia were present and death occurred within 11 hours of the onset of cerebral trouble. A post-mortem examination showed double pleurisy, pericardial effusion, aortic and tricuspid endocarditis, and deep congestion of the cerebral meninges, with hæmorrhagic effusion. Histological examination of the cerebral cortex by Nissl's method showed generalised diffuse chromatolysis. No old-standing lesion of the kidney or the liver was found which could have brought about the cerebral symptoms. The case was therefore one of cerebral rheumatism properly so called and the diffuse cellular lesions of the cerebral cortex were witnesses to the attack of the toxin upon the nervous centres.

Acute Putrid Pulmonary Abscess due to an Ear of Grass.

M. Lapointe and M. Gy at the meeting of the Anatomical Society held on Oct. 20th gave an account of the case of a child five years old upon whom pneumotomy had unsuccessfully been performed for a putrid abscess of the right lung, the cause of which was the inspiration of an ear of grass which was found lying in the abscess. The specimen was exhibited. The operation was quite easy for the cavity was on the surface of the lung, but the child was moribund

when operated upon, it being one month since the inspiration of the grass, and the patient died on the evening of the operation. Both lungs were affected with septic bronchopneumonia, infection having spread by the bronchi after the vomica had burst. M. Lapointe and M. Gy laid stress on the danger of expectant treatment in cases of pulmonary putrid abscess and urged the necessity of early pneumotomy. It was not right to count on natural drainage by the bronchi.

Nocturnal Incontinence of Urine an Early Sign of Renal Tuberculosis.

At the meeting of the Surgical Society held on Oct. 25th, M. Bazy recounted the case of a girl, aged 16 years, who had always enjoyed good health. Four months before her illness she had commenced to menstruate, but in December, 1904, she began to be troubled with frequent micturition, the urine being cloudy or thick, and a short time afterwards she developed nocturnal incontinence. All the usual forms of treatment were tried without effect until hæmaturia supervened and gave a clue to the disease. The urine was examined bacteriologically and Koch's bacillus was found. When M. Bazy saw the patient the diagnosis of renal tuberculosis was evident and the chief point upon which he insisted was the value of nocturnal incontinence as an early sign of renal tuberculosis. Every time that this occurs in an adolescent the physician should consider the possibility of tuberculosis which may thus be diagnosed when no other symptoms are manifest.

The Therapeutic Value of Lumbar Puncture in Fractures of the Skull.

At the meeting of the Society of Surgery held on Oct. 25th M. Quénu gave an account of seven cases of fracture of the skull which he had treated by lumbar puncture and all of which had recovered. One of the cases showed particularly well how rapidly efficacious this therapeutic method was. The case was that of a man who had a severe fracture of the occipital bone. Lumbar puncture was performed directly he entered the hospital and the fluid drawn off was almost pure blood. Half an hour after the operation the injured man, who had previously been comatose, recovered considerably and this condition lasted for two or three hours, after which he relapsed into unconsciousness. The lumbar puncture was repeated on the following day and for eight days afterwards. The quantity of blood obtained diminished progressively and as it diminished so the patient recovered his clearness of mind. Six weeks after his admission to the hospital he was quite well. Seven cases of recovery out of seven cases treated is a very remarkable result and it well shows the confidence which can be placed in this new method of treatment. Lumbar puncture no doubt brings about a diminution of the intracranial tension but probably also it has a good effect in diminishing the phenomena due to the reabsorption of blood which gives rise to the coma and the delirium.

Tuberculous Parathyroiditis: Convulsive Crises ending in Death.

At a recent meeting of the Society of Biology M. P. Carnot and M. Delion reported the case of a tuberculous patient who died while exhibiting special convulsive phenomena which lasted for eight hours and exhibited at one and the same time the symptoms of chorea, of athetosis, and of tetany. At the post-mortem examination there were found besides the ordinary tuberculous lesions of the lungs a sclerosis and leucocytic infiltration of the internal parathyroids and in addition complete degeneration of the external parathyroid. The two observers considered that this case must be placed in rank with those of tetanic convulsions which are observed in man after total thyroidectomy and in the lower animals after parathyroidectomy. It must also be closely related to the results observed in recent clinical researches on the parathyroid origin of certain kinds of tetany and certain kinds of eclampsia. It is apparently the first example of a spontaneous anatomo-pathological lesion localised in the parathyroids bringing about fatal conditions which are closely connected with the loss of function of these glandular organs.

Iodide of Arsenic in Infantile Scrofula.

At the meeting of the Academy of Medicine held on Oct. 24th M. Saint-Philippe read a paper on the above subject. He reminded his audience that so far back as 1898 he had communicated to the Academy a series of cases demonstrating the good effects of arsenic in children of a lymphatic temperament. At the present time he had seen a further 200 cases and he was able to affirm that iodide of arsenic gave admirable results in infantile scrofula and scrofulo-tuberculosis. Although scrofula and tuberculosis were from a laboratory point of view so much alike that scrofula might be called attenuated tuberculosis yet from the clinical point of view scrofula was a disease by itself. It was characterised by extreme weakness of the nutritional faculty and by excessive development of lymphatic tissue, the lymphatic glands being hypertrophied and over-active. Arsenic and iodine could not but act favourably, especially if their actions were united. Very often, however, iodide of arsenic was impure and it should be prepared by the method of Dupouy who gives the following directions: Pour a hot solution of potassium iodide into a solution of arsenious acid in hydrochloric acid, shake up the mixture with carbon disulphide, draw off the carbon disulphide, and set it aside in a current of air and out of the rays of the sun. Evaporate carefully and the result will be that beautiful crystals of teriodide of arsenic resembling rubies will crystallise out. It may be administered in doses of from 10 to 40 drops of a 1 per cent. solution with food morning and evening.

Some Points in Marine Biology.

At the meeting of the Society of Resident Medical Officers of Hospitals which was held on Oct. 28th Monsignor the Prince of Monaco gave an interesting lecture upon marine biology. The first part of the lecture, which was illustrated with maps and lantern slides, was devoted to oceanography and the various apparatus and methods used in the work. The second part of the lecture dealt with the results which oceanography had given from the biological and bacteriological point of view. An account was given of the researches which had been carried out of late years into the poison of sea anemones and sponges, the hypnotic effects of which are so curious. The Prince also referred to the researches of Bertrand upon the universal existence of arsenic in animal tissues, which were based upon the examination of animals dredged up from a great depth or from elsewhere in the sea.

Nov. 7th.

ITALY.

(FROM OUR OWN CORRESPONDENT.)

Invalids and Railway Travelling.

IN illustration of the unpunctuality of the Italian railway service and the excessive slowness of the trains the following anecdote—"ben trovato, se non è vero!"—is on circuit. A man wanting to commit suicide laid himself across the metals in anticipation of the express. He was ultimately picked up dead—from starvation. Jesting apart, the conditions of railway travel in Italy are nothing short of a European scandal—all the more that at this season and for some weeks to come a large proportion of the passengers are invalids on their way to this or that winter city or seaside "sun-trap." Physicians, in fact, are quite justly warning their patients of the risks encountered on lines which they have formerly traversed without discomfort or undue loss of time and so frequently has that warning, with equal justice, been taken that the widespread interests involved in the reception, housing, and entertainment of such "arrivals" are suffering acutely from loss of custom and swelling the chorus of protest resounding through the kingdom. And not only are the unpunctuality and defective appointments of the trains universally complained of, but so called "accidents," resulting from an under-manned *personnel*, are becoming frequent enough to deter all but the more urgent class of wayfarers from entrusting life and limb to such service, whether "direct" or "omnibus." Two collisions just outside the Milan station—one of the largest in Italy—and another a few miles from Rome on the Naples line—all three in one day and, by supreme good fortune, causing no loss of life, although much serious "shock" and personal injury—are but too typical of the mismanagement pervading the whole railway network. The truth is that the old companies and the Government into whose hands the administration of the lines has passed have each been trying to get the better of the other—the former having, so far, had the advantage in the ignoble

conflict—deficiency in the quality and amount of the rolling stock being one item out of many in the *damnosa hereditas* bequeathed to the Government. Add to this that on considerable tracts of the main lines—notably in the tunnels—there is but a single pair of rails, adequate enough when they were first laid some 40 years ago but now quite unequal to the yearly increasing traffic in passengers and goods. To add another pair of rails to that already existing would be a work of years, involving vast expense in blasting rock and otherwise widening the route. Italy, indeed, is paying the penalty of her shortsightedness in railway construction, squandering on her army, and still more on her navy, the millions that should have gone to facilitate communication between herself and the outer world, as well as between her internal cities and provinces. Garibaldi, with a sagacity that he never got credit for—"He has the heart of an angel and the head of a buffalo," was Massimo d'Azeglio's description of him—long ago raised his voice against the lavish expenditure on military and naval works as quite uncalled for and as fatally impoverishing other interests much more clamant. "Who wants to attack Italy?" I remember his once asking. "What Power would be allowed by the sister Powers to effect a foothold, as conqueror or even as temporary invader, in the Italian kingdom? Her real defences are her art treasures, her monuments redolent of a mighty past, which it is the interest of civilisation to keep intact and in her hands for the benefit of the outside world." Wise words these and worthy of being practically followed up. Meanwhile, as one way out of the railway *impasse*, Italy is contemplating a vastly increased motor-car service till her lines are made equal to the ever-growing demands of her passengers and her commerce.

Dr. Manasse Ottolenghi.

A strenuous and altogether exemplary life has just been closed by the death of this able and accomplished practitioner. Florence, where he lived and died, possessed few citizens so *simpatici* (to use the Italian epithet), so prompt to put at the public service such a rare equipment of professional skill and personal energy. For many years he was divisional surgeon (*medico condotto*) in that congeries of rookeries known as the "Centro," long since cleared away and replaced by the imposing Piazza Vittorio Emanuele, and there he came in contact with nearly every type of disease which insanitary conditions can cause and misery aggravate. Always the embodiment of benevolence and the bringer of comfort and relief, he could venture at all hours into the *penetralia* of vice and crime, where even the emissaries of the Church were something less than welcome and the representatives of the law were only safe when in awe-inspiring force. Later in life he was surgeon to the fire brigade and medical officer to the city guard and to that of the octroi service. Not long before his death he was appointed *medico primario* of S. Maria Nuova. Comparatively young—he was only 58 years of age—he contracted blood poisoning and after struggling with its sequelæ for about a month he rather suddenly passed away.

Nov. 7th.

Obituary.

MICHAEL BENNY, M.D. EDIN., M.R.C.S. ENG.

BY the death of Dr. Michael Benny the profession in Scotland has lost one of its ablest and most cultured practitioners. He studied at the Universities of Edinburgh and Glasgow when Christison, Syme, Simpson, the two Begbies, George Buchanan, and George Macleod were in the zenith of their fame, so that when he graduated as M.D. in 1861 he carried with him to Denny the impress of great teachers which had an abiding influence for the rest of his life. It was not long before Dr. Benny acquired a large practice and the number of accidents that he had to attend to in connexion with the works made him a warm supporter of the late Mr. John Collins, paper manufacturer, Denny, in his efforts to erect a cottage hospital, and ever since its opening Dr. Benny advocated its usefulness and was mainly instrumental in making it an exceedingly popular institution. It is at present being enlarged and its work is carried on by his two sons-in-law, Dr. J. Joss and Dr. J. H. Lumsden, who have been for a number of years associated with him in his practice. His paper on "Amputations after Injury in the Country" shows how thoroughly he understood his work and how successfully he carried it out. He was an excellent operator and kept himself informed of all the advances in medicine and surgery; moreover, he was gifted with a large amount of that medical instinct which is so helpful in dealing with disease, while his commanding presence and charm of manner inspired many a sufferer with fresh hope. Dr. Benny was an enthusiastic sportsman and enjoyed nothing better than a day on the moors or at the covert side and he was one of the keenest curlers in the county of Stirling. Latterly he devoted himself to consulting work and his opinion was greatly valued by all who knew him. In the midst of his busy life he found time to take an interest in many matters outside his profession. The appreciation in which he was held was evident on the day of his funeral, which was the largest ever seen in Denny, the whole district turning out to attend it in order to show their respect for his memory. Much sympathy is felt for his widow and family.

WILLIAM O'NEILL, M.D. ABERD., M.R.C.P. LOND.

Dr. William O'Neill of Lincoln died at his residence in Lindum-street on Oct. 29th after an illness of several weeks' duration. He not only held a prominent position among the medical men of the city but was remarkable for his extensive knowledge of a variety of subjects which in his hands supplied material for considerable literary work. Dr. O'Neill was born in 1830, being the youngest son of the late Mr. John O'Neill of Manor Hamilton in county Leitrim, Ireland. He studied medicine at Trinity College, Dublin, and obtained the diploma of Extra-L.R.C.P. Lond. in 1854; he subsequently proceeded to King's College, Aberdeen, where he graduated as M.D. in 1859 and was admitted M.R.C.P. Lond. in 1877. About 50 years ago he commenced practice in Lincoln, where he was for some years physician to the General Dispensary and also held the appointment of physician to the Lunatic Hospital. To the columns of THE LANCET Dr. O'Neill contributed both original articles of clinical interest and letters on various topics. Thus on April 8th, 1905, p. 958, we published a letter by him describing the insanitary state of Lincoln in the year 1857 when the city was visited by a severe epidemic of enteric fever, after which sewerage works were undertaken. Phonographic shorthand, architecture, and archæology were among the non-professional pursuits which engaged his attention; he was also a collector of pottery and porcelain and wrote memoirs on various questions connected with this subject. His archeological papers referred mainly to Lincoln under the Roman occupation and to the Lia Fail, or Coronation Chair, in Westminster Abbey. The funeral took place at Canwick churchyard on Nov. 3rd and was attended by a large assemblage.

JOSEPH ORPE BROOKHOUSE, M.D. ST. AND., M.R.C.P. LOND., F.R.C.S. ENG.

Dr. Joseph Orpe Brookhouse, senior physician to the Nottingham General Hospital, died on Nov. 3rd, in his seventieth year. The deceased, who was a native of Sussex, studied medicine at Guy's Hospital and became qualified in 1857, when he obtained the diplomas of M.R.C.S. Eng. and L.S.A. In 1862 he graduated as M.D. at the University of St. Andrews and was admitted F.R.C.S. Eng. in 1868 and M.R.C.P. Lond. in 1874. In 1859 he commenced practice in Nottingham and was one of the founders of the Nottingham and Midland Eye Infirmary, which was established in that year; he also at an early period joined the medical staff of the Nottingham General Hospital. In August, 1882, he contributed to THE LANCET an account of a case of intestinal obstruction due to a concretion consisting mainly of cholesterin.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Frank Buller, professor of diseases of the eye and ear in the McGill University, Montreal.—Dr. John A. Ouchterlony, professor of clinical medicine in the University of Louisville.—Dr. Akos Puky, chief of the surgical department of the Red Cross Hospital, Budapest.—Dr. E. Ménière, chief surgeon to the National Institution of Deaf Mutes, Paris.—Dr. Florschutz, of Coburg, who was for many years body physician to Duke Ernst and Duke Alfred. He was 92 years of age and senior burgher of the town.—Dr. Jules Guyot, formerly physician to the Paris hospitals.

Medical News.

UNIVERSITY OF OXFORD.—William Osler, D.M., Hon. D.Sc., student of Christ Church, Regius Professor of Medicine, has been elected a member of the Hebdomadal Council.—The remaining degree days during the present term are Thursday, Nov. 30th, and Tuesday, Dec. 19th.

UNIVERSITY OF CAMBRIDGE.—The following have been appointed examiners for the M.B. and B.C. degrees:—Chemistry: Mr. J. E. Purvis and Mr. W. J. Sell, F.R.S. Physics: Mr. P. V. Bevan and Mr. T. G. Bedford. Biology: Mr. A. E. Shipley, F.R.S., and Professor H. Marshall Ward, F.R.S. Anatomy: Professor A. Macalister, F.R.S., and Mr. F. G. Parsons. Physiology: Mr. F. G. Hopkins, F.R.S., and Dr. M. S. Pembrey. Pharmacology: Professor R. Stockman and Mr. W. E. Dixon. General Pathology: Professor S. Delépine and Mr. T. S. P. Strangeways.—The State Medicine Syndicate, in its annual report just issued, shows that in April and October of the present year 71 candidates presented themselves for the examination in public health. 41 candidates were successful in obtaining the diploma. For the examinations in tropical medicine and hygiene held in January and August 24 candidates presented themselves, of whom 16 passed and received the University diploma. In order to cover the somewhat heavy expenses of the examination, which is held partly in Cambridge and partly in London, the fee has been raised to 9 guineas.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At the opening of the winter session of the Royal College of Surgeons in Ireland the prizes of the previous session were distributed by Mr. Arthur Chance, the President. In addressing the students Mr. Chance said that before applying for a Poor-law appointment they ought to satisfy themselves that the conditions were such as would permit them efficiently to perform their responsible duties towards the sick poor; that the emoluments were sufficient to enable them to occupy a position such as the humblest member of the medical profession was entitled to; and that their action did not weaken, or tend to render ineffective, the legitimate protests of their professional brethren. Mr. Chance then proceeded to make some remarks on University education in Ireland. He said that a University degree in law did not confer the right to practise as a barrister or solicitor; neither did a degree in divinity confer a right to ordination; but in medicine, on the contrary, a university degree was one of the very many recognised portals to the profession. Its possession was usually a substitute for—not an addition to—some other qualification, and its possessor should not be assumed to have a greater professional knowledge than a diplomate of the licensing bodies. Mr. Chance then expressed regret that there was no university in Ireland which made residence essential for its medical degrees and concluded with some remarks on the subject of medical students who, having been educated in Ireland, offered themselves for examination in Scotland or England. The following is the prize list:—Barker anatomical prize (£26 5s.), T. A. Burke; special prize (£21), J. B. Kelly. Carmichael scholarship (£15), R. M. Bronte. Gold and silver medals in operative surgery: gold, J. Prendiville; silver, R. Bury and L. Lucas (equal). Stoney memorial gold medal in anatomy: T. Sheehy. Descriptive anatomy: junior: G. C. Sneyd, first prize (£2) and medal; R. Adams, second prize (£1) and certificate. Senior: H. W. White, first prize (£2) and medal; J. Murray, second prize (£1) and certificate. Practical anatomy: first year: Miss I. M. Clarke, first prize (£2) and medal; C. Greer, second prize (£1) and certificate. Second year: G. S. Levis, first prize (£3) and medal; G. W. Stanley, second prize (£1) and certificate. Practice of medicine: L. Lucas, first prize (£2) and medal; J. Prendiville, second prize (£1) and certificate. Surgery: L. Lucas, first prize (£2) and medal; C. H. Wilson, second prize (£1) and certificate. Midwifery: J. Prendiville, first prize (£2) and medal; G. M. Loughnan, second prize (£1) and certificate. Physiology: A. E. S. Martin, first prize (£2) and medal; G. S. Levis, second prize (£1) and certificate. Chemistry: R. H. F. Taaffe, first prize (£2) and medal; R. Adams and Miss I. M. Clarke (equal), second prize (£1) and certificate. Pathology: G. F. Shepherd, first prize (£2) and medal; C. J. Hare, second prize (£1) and certificate. Physics: R. Adams, first prize (£2) and medal; Miss I. M. Clarke, second prize (£1) and certificate. Practical Histology: G. C. Sneyd, first prize (£2) and medal; E. Harrison, second prize (£1) and certificate. Practical Chemistry: Miss A. F. Nash, first prize (£2) and medal; T. A. Peel, second prize (£1) and certificate. Public Health and Forensic Medicine: C. J. B. Dunlop, first prize (£2) and medal; W. E. M. Hitchins, second prize (£1) and certificate. Materia Medica: C. J. B. Dunlop, first prize (£2) and medal; V. J. Clifford, second prize (£1) and certificate. Biology: E. A. Gregg, first prize (£2) and medal; E. Harrison, second prize (£1) and certificate.

VITAL STATISTICS OF SOUTHERN NIGERIA.—It is stated in the report for 1904, forwarded to the Colonial Office by Mr. W. Egerton, the High Commissioner, that the estimated European population resident in the Protectorate numbered 500, of whom 157 were officials and 343 merchants or missionaries. In the preceding year the numbers of officials and "others" were 159 and 301 respectively. The net increase of the European population was 40, there being a decrease of two under officials and an increase of 42 under "others." The general health of the Europeans was fairly satisfactory. The deaths during the year numbered 19, of which 16 were attributable to disease and three to accident, giving a mortality-rate of 38 per 1000 compared with a rate of 26·08 in 1903 and 27·22 in 1902. The chief causes of death were fever and abscess. The invaliding rate for officials was 114·68 per 1000 and for "others" 69·97, the average rate being 84 per 1000. Sickness was most prevalent during the months of May, July, and October, and the highest death-rate was recorded in August and October. The number of invalidings was greatest in July, August, and September. During the year 31,932 cases of disease were treated, of which 240, or 7·51 per 1000, ended fatally. These included 250 cases of guinea-worm and nine of small-pox. None of the small-pox cases terminated fatally. The number of successful vaccinations was 8711, or 2522 in excess of the figures for 1903, but these figures do not by any means represent the actual number of vaccinations performed, as many were made in November under the new vaccination scheme, as to the result of which figures were not available at the close of the year. The sanitary condition of Duke Town was much improved by the laying out of new streets and the relief of overcrowding. The town now presents a trim and clean appearance which excites the admiration and surprise of officials who have had experience of the malodorous squalor of the typical Eastern bazaar. The water-supply is excellent and the sanitary arrangements are being rapidly extended and improved. A lunatic asylum was built in Calabar but legislation will be necessary to give the High Commissioner power to confine therein others than criminal lunatics. Chicken-pox broke out in the Calabar gaol and three deaths occurred from the malady. There was a severe outbreak of guinea-worm among soldiers quartered at Calabar and the Cross River stations. There is no doubt that the troops affected acquired the infection while on active service in the Mkpani country about a year before. By systematic drainage and filling up of swamps much was done to improve the sanitary condition of the stations at Opobo, Bonny, Brass, Forcados, Akassa, Sapele, Warri, Aboh, and As-aba. Thanks to improved sanitation, Akassa, once regarded as one of the unhealthiest stations in the Protectorate, has now become one of the most salubrious. The reputation of Forcados, too, is improving, but much still remains to be done in clearing it of mangrove swamp. The machinery for estimating the total population or even accurately ascertaining the number of births and deaths is so defective that any attempt to give trustworthy figures would be useless. The number of births registered was 153, as compared with 34 in 1903. Of these 91 were male and 62 were female births, 24 being among aliens and 129 among natives. The large increase is due to the adoption of the registration system by more native councils. Of Christian marriages 76 were registered, against 57 in 1903. In Calabar district 51 were recorded. The deaths registered were 211 in number, comprising 130 males and 81 females. Among aliens 48 deaths occurred, while the native mortality was 144. Of Europeans 19 died. The mortality of alien and native infants under one year of age was 38 and of children under seven years of age 66. The general condition of the people is one of *dolce far niente*. They are not inclined to look far ahead and yet are not content to live from hand to mouth,

a mental attitude which is easily intelligible, although it is discouraging to the Government which aims at the introduction of a civilisation which will undoubtedly make the life of the native more strenuous as it becomes more elevated. The native courts, it is gratifying to find, are doing excellent work and fostering among the people an interest in their local affairs. Considering the enormous population there is little crime and, as a rule, the native admits his guilt in striking contrast to the tactics of accused persons in other countries. The people are typical of the country in that they are mentally undeveloped and afford an enormous field for the efforts of the pioneers of civilisation. They are free from direct taxation; they live in comfort and have few or no cares. On the whole their lot is a happy one.

GENERAL INFIRMARY, LEEDS.—A special meeting of the governors was held on Nov. 3rd to carry into effect a recommendation of the weekly board that Dr. C. M. Chadwick, whose resignation of the post of honorary physician was referred to in THE LANCET of Oct. 7th, should be appointed a consulting physician to the institution. The recently revised rules provide that any physician who has been on the full staff for a period of 20 years or who has attained to the age of 60 years becomes a member of the consulting staff and retains the right to the use of six beds. Should, however, the resignation of any member of the staff anticipate these events in point of time it is competent for a meeting of governors specially summoned and acting on the recommendation of the weekly board to elect such member to a position on the consulting staff with the same privileges as if he had attained to the position through length of service. By Dr. Chadwick's resignation a vacancy for the post of assistant physician was caused and at a meeting of the special committee for the election of the honorary staff Dr. W. H. MAXWELL TELLING was appointed to this position.

RETIREMENT OF DR. R. R. ALEXANDER.—The medical superintendent of the London County Lunatic Asylum, Hanwell, Dr. R. R. Alexander, having completed over 32 years' service, has retired on a pension. On Nov. 2nd he was presented with an illuminated address, a dressing bag, and a silver cigarette case from the officers, nursing staff, and administrative staff. Mr. J. Jeffery, chairman of the Hanwell asylum subcommittee of the London County Council, presided and in making the presentation spoke of the sorrow which everyone present would feel on the occasion of their losing Dr. Alexander. In handing to Dr. Alexander the gifts he said: "I have much pleasure in handing these over to you and I hope you will enjoy that rest and refreshment you have so well earned by always trying to do your best. The committee and the Council have recognised your services by giving you the largest pension in their power to bestow." Dr. Alexander, in responding, expressed his heartfelt thanks for the kindness which he had received and his gladness that he was to be succeeded by Dr. P. J. Baily. The Rev. W. G. Williams, one of the chaplains, also spoke and after a few remarks from the chairman the proceedings terminated.

DONATIONS AND BEQUESTS.—By the will of Mr. James Davenport of Hey-in-Lees, Lancashire, £1000 are bequeathed to the Oldham Infirmary.—The Derbyshire Royal Infirmary will receive, under the will of Mr. W. R. Smith of Derby, £1000 for the endowment of a bed. The Children's Hospital, Derby, under the same will receives a legacy of £500.—Mr. E. T. B. Wightman of Norwich has left by will £500, or such further sum as may be necessary to endow a cot in the "Jenny Lind" Hospital for Sick Children at Norwich.—Mr. Christopher D. Barker of Great Malvern has bequeathed £500 to the Malvern Rural Hospital and £200 to the Worcester Infirmary.—Mr. T. Sheldon of Clevedon (Somerset) has bequeathed £250 each to the Bristol Royal Infirmary and the Bristol General Hospital, and £200 each to the Bristol Children's Hospital, the Bristol Eye Hospital, the Clevedon Hospital, the Clevedon Convalescent Home, and the Weston-super-Mare Sanatorium.—Lord Ludlow, the treasurer of St. Bartholomew's Hospital, has received the following donations to the building fund: £75 anonymously, per Dr. W. S. A. Griffith, and £262 10*s.* from the Worshipful Company of Salters (second instalment).—The Chelsea Hospital for Women has received from the Merchant Taylor's Company a donation of £31 10*s.*, and the Hon. Mrs. Lionel Tollemache has given £50 to the convalescent home.

HOSPITAL SATURDAY AT TORQUAY.—Hospital Saturday was recently observed in Torquay, when the sum of £189 was collected for the Torbay Hospital. This is the highest sum that has ever been collected in Torquay on Hospital Saturday.

INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH: A REPUDIATION.—The executive secretary of this society asks us to state that the society is not promoting an exhibition of pure food, a statement to that effect which has recently been circulated in the press being without foundation.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC.—The seventh annual dinner of this institution will be held at the Trocadéro Restaurant on Friday, Dec. 8th, at 7.15 for 7.30 P.M., Mr. A. W. Mayo Robson being in the chair. Ladies will be admissible as guests. Dinner tickets, price 7*s.* 6*d.* each, exclusive of wine, can be obtained from the Medical Superintendent, 22, Chenies-street, London, W.C.

CHORLEY AND DISTRICT MEDICAL SOCIETY.—At the November meeting of the above society, following a discussion on Our Milk Supply, it was unanimously decided to send the following resolution to the Local Government Board:—

That this society, being convinced that there is great danger to the public health from tuberculosis of animals, especially from bovine tuberculosis, is strongly of opinion that radical measures should be adopted by the State towards the absolute elimination of animal tuberculosis.

BOOKS, ETC., RECEIVED.

KING, P. S., AND SON, Orchard House, Westminster, S.W.

A History of English Philanthropy from the Dissolution of the Monasteries to the Taking of the First Census. By B. Kirkman Gray. Price 7*s.* 6*d.* net.

LAURIE, T. WERNER, Clifford's Inn, Fleet-street, E.C.

With John Bull and Jonathan. Reminiscences of Sixty Years of an American's Life in England and in the United States. By John Morgan Richards, President of the American Society in London, 1901–1902. Price 16*s.* net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

St. Giles's of the Lepers. By Edward C. W. Grey. Price 3*s.* 6*d.* net.

The Food Factor in Disease: being an Investigation into the Humoral Causation, Meaning, Mechanism, and Rational Treatment, Preventive and Curative, of the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, Epilepsy, etc.), Bilious Attacks, Gout, Catarrhal, and other Affections, High Blood-pressure, Circulatory, Renal, and other Degenerations. By Francis Hare, M.D., late Consulting Physician to the Brisbane General Hospital, Visiting Physician to the Diamantina Hospital for Chronic Diseases, Brisbane, Inspector-General of Hospitals for Queensland. In two volumes. Price 30*s.* net.

MACMILLAN AND CO., LIMITED, London.

The Prevention of Senility and A Sanitary Outlook. By Sir James Crichton-Browne, M.D., LL.D., F.R.S., Lord Chancellor's Visitor in Lunacy. Price 2*s.* 6*d.* net.

MASSON ET CIE, 120, Boulevard Saint-Germain, Paris.

Traité Pratique de Technique Orthopédique. Technique du Traitement de la Luxation Congénitale de la Hanche. Par le Dr. F. Calot, Chirurgien en chef de l'Hôpital Rothschild. Price Fr.7.

MEDICAL SOCIETY OF THE STATE OF NEW YORK (Secretary, Frederic C. Curtis, Albany).

Transactions of the Medical Society of the State of New York for the Year 1905. Price not stated.

MURRAY, JOHN, 50A, Albemarle-street, London, W.

Poultry Farming: Some Facts and Some Conclusions. By "Home Counties." Price 5*s.* net.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, INDIA, 8, Hastings-street, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series, No. 19. On Kala Azar, Malaria, and Malarial Cachexia. By Captain S. P. James, M.B., I.M.S. Price 1 rupee 4 annas, or 1*s.* 11*d.*

OLIVER AND BOYD, Edinburgh.

The Transactions of the Edinburgh Obstetrical Society. Vol XXX. Session 1904–1905. Price not stated.

RUDEVAL, F. R. DE, 4, Rue Antoine Dubois, Paris.

Interprétation Nouvelle du Mécanisme de l'Hémoptysie Tuberculeuse. Thérapeutique Préventive de l'Hémoptysie. Par le Dr. Fernand Barbary, Délégué de la Société de Préservation contre la Tuberculose, Membre du Bureau International pour la Lutte contre la Tuberculose. Price Fr.3.50.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

Nursing: Hints to Probationers on Practical Work. By Mary H. Annesley Voysey. Price 2*s.* net.

The Nursing of Sick Children. By James Burnet, M.A., M.D., M.R.C.P. Edin., Registrar and Assistant to the Extra-Physicians, Royal Hospital for Sick Children. Price 1*s.* net.

SHARLAND, R. L., 36, Churchfield-road, Acton, W.
The Scientific Roll and Magazine of Systematised Notes. Conducted by Alexander Ramsay. Bacteria. Volume I., Nos. 10, 11, 12, 13, 14, 15, 16 (December, 1903, to September, 1905). Price 1s. each.

SMITH, ELDER, AND CO., 15, Waterloo-place, S.W.
Ellis's Demonstrations of Anatomy: being a Guide to the Knowledge of the Human Body by Dissection. Twelfth edition, revised and edited by Christopher Addison, M.D., B.S. Lond., F.R.C.S., Lecturer on Anatomy, Charing Cross Hospital Medical School. Price 12s. 6d. net.

SPRINGER, JULIUS, Berlin.
Untersuchungs- und Behandlungsmethoden der Kehlkopfkrankheiten. Von Dr. Theodor Heryng. Price not stated.

SWAN SONNENSCHEIN AND CO., LIMITED, 25, High-street, Bloomsbury, W.C.
In Memory of Those that Have Gone Before. Price 1s. 6d. net.

WITHERBY AND CO., 326, High Holborn, and 4, Newman's court, Cornhill, E.C.
The Royal Navy List and Naval Recorder. No. 112. October, 1905. Published Quarterly. Price 10s.

WOOD, WILLIAM, AND CO., New York.
A Treatise on the Nervous Diseases of Children. For Physicians and Students. By B. Sachs, M.D., Alienist and Neurologist to Bellevue Hospital, Neurologist to Mt. Sinai Hospital. Second edition, revised. Price not stated.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANNAND, W. FRASER, M.D., B.S. Lond., has been appointed Assistant Resident Medical Officer at Queen Charlotte's Hospital, Marylebone-road, N.W.

BARNES, ALFRED J., L.A.H., M.P.S.I., has been appointed Examiner in Preliminary Education, Pharmaceutical Society of Ireland.

BATEMAN, W. HIBBT, M.B., Ch.B. Vict., has been appointed Honorary Medical Officer to the Rochdale Infirmary.

BOND, FRANCIS T., M.D. Lond., has been re-appointed Medical Officer of Health to the Thornby District Council, Gloucestershire.

BOYLE, A., M.B. Leeds, has been appointed Resident Obstetric Officer at the General Infirmary, Leeds.

COOPER, R. HIGHAM, L.S.A., has been appointed Assistant Medical Officer in the Electro-therapeutic Department, University College Hospital.

FEARNLEY, HAROLD, M.B. Leeds, has been appointed Resident Medical Officer at the Leeds Public Dispensary.

GOUGH, A., M.B. Leeds, has been appointed House Physician at the General Infirmary, Leeds.

GRACE, ALFRED, L.S.A. Lond., has been appointed Deputy Medical Officer for the First District and Workhouse, by the Chipping Sodbury (Gloucestershire) Board of Guardians.

HARVEY, FRANK, M.R.C.S., L.S.A., has been appointed Medical Officer to Padstow (Cornwall) Post Office (including St. Merryn and St. Issey), and also Medical Officer to the Padstow and Little Petherick Police.

LEACH, HAROLD, M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon at the Hospital for Women and Children, Leeds.

LEGGE, J. H., M.B., B.S Lond., has been appointed House Surgeon at the General Infirmary, Leeds.

MCCALL, EVA, M.D. Glasg., has been appointed Second Assistant Medical Officer at the Hull City Asylum, Willerby.

MENZIES, JAMES ACWORTH, M.D., C.M. Edin., has been appointed Honorary Ophthalmic Surgeon to the Rochdale Infirmary.

RICHMOND, D., M.D., Ch.B. Glasg., has been appointed Honorary Medical Officer to the Rochdale Infirmary.

SMAILES, W. H., M.B., B.S. Lond., has been appointed House Surgeon at the General Infirmary, Leeds.

STEWART, FREDERICK W., B.A., M.B. R.U.I., has been appointed Second Assistant Medical Officer to the Kent County Asylum, Barming Heath, near Maidstone.

WALTERS, B. ELINOR, M.B., B.S. Lond., has been appointed House Surgeon at the York Dispensary.

WHALLEY, J., M.B. Leeds, has been appointed House Physician at the General Infirmary, Leeds.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE, War Office, S.W.—Forty Commissions in the Royal Army Medical Corps.

BARRA PARISH COUNCIL.—Medical Officer. Salary £119 per annum.

BETHNAL GREEN INFIRMARY AND WORKHOUSE.—Assistant Medical Officer.—Salary at rate of £100 per annum, with apartments, board, and washing.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with rooms, fire, lights, and attendance.

BRADFORD ROYAL INFIRMARY.—Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRENTFORD UNION INFIRMARY AND WORKHOUSE, Isleworth.—Assistant Medical Superintendent and Medical Officer, unmarried. Salary £120 per annum, with apartments, rations, washing, &c.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £70 per annum. Also Third House Surgeon, unmarried. Salary £50 per annum. Board, residence, and washing in both cases.

BRISTOL DISPENSARY.—Two vacancies on Medical Staff.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn-road, W.C.—Honorary Second Assistant Anæsthetist.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board and apartments.

DEVIZES, WILTS COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £160, rising to £190, with board, residence, attendance, and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark. House Physician and House Surgeon. Salary £80 respectively, with board, residence, and washing. Also Assistant House Surgeon. Salary £70, with board, residence, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway.—Surgeon.

HULL ROYAL INFIRMARY.—Casualty House Surgeon. Salary £80 per annum, with board and lodging.

INDIAN MEDICAL SERVICE, India Office, London.—Twenty-one Commissions in His Majesty's Indian Medical Service.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—Pathologist.

LONDON COUNTY COUNCIL.—Assistant to the Pathologist of the London County Asylums. Salary £250 per annum.

MANCHESTER, ST. MARY'S HOSPITAL, Clifford-street.—House Surgeon. Salary £70 per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Medical Officer in Charge of the Electrical Department. Honorarium £52 10s. per annum.

MIDDLESEX HOSPITAL, W.—Vacancy on the Honorary Staff and Election Committee.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £80 per annum, with board, attendance, and washing.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.—Anæsthetist.

NEW HOSPITAL FOR WOMEN.—House Physician, Resident Medical Officer for the Maternity Department, and Clinical Assistants. All females.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Two House Surgeons for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road. — Resident Medical Officer, also Assistant Resident Medical Officer, both for six months. Salaries at rate of £50 per annum, with board, residence, and washing.

NOTTINGHAM WORKHOUSE INFIRMARY.—Junior Resident Medical Officer, unmarried. Salary £120, with apartments, board, washing, and attendance.

ROYAL EAR HOSPITAL, Dean-street, Soho, W.—House Surgeon. Honorarium at rate of £40 per annum. Also Clinical Assistants.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Clinical Assistants for six months.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Demonstrator in Physics. Salary £100.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium of £25, with board and lodging.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry allowance provided.

WORKSOP DISPENSARY AND HOSPITAL.—Medical Officer, House Surgeon, and Dispenser. Salary £150 per annum, with rooms, attendance, coal, and gas.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Newport in the county of Salop, and at Denny in the county of Stirling.

Births, Marriages, and Deaths.

BIRTHS.

BIDWELL.—On Nov. 6th, at Upper Wimpole-street, W., the wife of Leonard A. Bidwell, F.R.C.S., of a son.

FRANCIS.—On Nov. 1st, at Arnold, Notts, the wife of Harvey Francis, M.D., of a son.

WALKER.—On Nov. 2nd, at Hellons House, Haverhill, Suffolk, the wife of J. R. Hall Walker, M.D., of a daughter.

MARRIAGE.

BENNETT-JONES—DALY.—On Nov. 4th, at St. Mark's, Dalston, by the Rev. J. G. Pilkington, M.A., vicar of Holy Trinity, Paddington, assisted by the Rev. Sir Burradaile Savory, Bart., M.A., rector of St. Bartholomew's the Great, West Smithfield, and the Rev. G. C. Daw, M.A., vicar of St. Mark's, William James Bennett-Jones, M.D., Sheil-road, Liverpool, to Nora, daughter of F. H. Daly, Esq., M.D., J.P., Amhurst-road, Hackney Downs, London.

DEATHS.

APPLEYARD.—On Nov. 4th, at 3, Clifton Villas, Bradford, John Appleyard, M.B., F.R.C.S., aged 57 years.

GRIFFITHS.—On Nov. 3rd, at Preston Candover, Herbert Tyrrell Griffiths, M.D., aged 52 years.

JONES.—On Sept. 25th, at his residence, Stanger, Natal, Henry William Jones, J.P., M.R.C.S., L.R.C.S., L.R.C.P., L.M., District Surgeon, Lower Tugela Division; District Health Officer, Lower Tugela Division; Indian Medical Officer for the Stanger Circle, aged 55½ years.

O'NEILL.—At his residence, 2, the Lindum-road, Lincoln, on Sunday, Oct. 29th, 1905, William O'Neill, M.D., C.M., M.R.C.P. Lond., &c., &c.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

A BONE-SETTER'S DIAGNOSIS.

ON Nov. 2nd an inquest was held at York upon the body of John Henry Burdett. Evidence showed that in February the deceased had met with an accident by which he injured his spine, causing paralysis of the legs. He was six weeks in the York County Hospital and was subsequently treated at home. He recovered enough to be able to sit up and to be wheeled about in a chair. About the end of September he consulted a bone-setter named Reed of Bishop Auckland who told him that his ankles and knees were dislocated. About a fortnight after this interview Reed treated Burdett and according to the latter's son, who was present, Reed used force to the joints and Burdett said that it gave him pain although he maintained that he felt better for the treatment. But, added the son, his appetite fell off. Two medical men, Dr. H. Gott and Mr. F. Shann, deposed that the deceased had suffered from blood poisoning consequent upon a sloughing bedsore. Mr. H. W. Reynolds, the police surgeon who made the post-mortem examination, agreed with the evidence of the other two medical men. There was no sign of dislocation but there was bruising round the joints which were full of purulent fluid. The jury returned a verdict in accordance with the medical evidence and the coroner remarked that it was clear that the deceased had undergone a certain amount of unnecessary suffering. We do not suppose that the bone-setter's ignorance did more than hasten death but we should think that it was highly probable that his rough treatment of the joints predisposed them to bacterial invasion. With the law in its present state, however, nothing can be done to prevent such folly on the part of sick people or of what amounts to fraud on the part of unqualified practitioners.

THE LONDON TEMPERANCE HOSPITAL AND TEMPERANCE STATISTICS.

To the Editors of THE LANCET.

SIRS,—Dr. Alfred H. Copeman's attack upon the London Temperance Hospital in THE LANCET of Oct. 28th is a striking example of the spirit which should be absent from the discussion of scientific questions. The gist of his letter is contained in the following sentence: "Here we have a body of medical men, with the enthusiastic approbation of a lay committee, withholding one of the most powerful, and in some cases indispensable, drugs in the Pharmacopœia purely for the purposes of experimentation, with a view to the glorification of their own particular views." In these few lines Dr. Copeman combines the gravest possible faults. He conveys the false impression that the use of alcohol in all its forms is excluded from the practice of the London Temperance Hospital. He suppresses the fact that each member of the visiting staff is free to prescribe alcohol when deemed necessary. He sneers at "experimentation," which is the only means of correcting erroneous methods of treatment and superseding them by improved methods. He assumes that life is sacrificed by withholding alcohol when indispensable to recovery. And lastly, he represents the experienced, conscientious, and independent staff of our hospital as acting "with a view to the glorification of their particular views." I submit, Sirs, that this is not reasoning, and it is simple charity to suppose that Dr. Copeman is blinded to the full significance of his expressions. He concludes by suggesting the holding of a conference of experts to consider a question on which he has already pronounced a positive judgment.

Yet even Dr. Copeman's letter is evidence of progress. He speaks of alcohol as a drug, to be administered in small quantities, and with much caution; and this is a virtual condemnation of the free and careless use of alcohol too common before the establishment of the London Temperance Hospital—an abuse that drew forth an expressive protest and warning from the heads of the medical profession in 1871. Since then medical thought and practice have been moving in the direction of the London Temperance Hospital. For this we are thankful and hopeful.—I am, Sirs, yours faithfully,

DAWSON BURNS,
Honorary Secretary to the London Temperance Hospital.

Nov. 4th, 1905.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of Oct. 7th I referred to a report by Dr Dawson Burns in which that gentleman compares 65,657 patients from general hospitals with a death-rate of 9·1 per cent. with 1337 temperance hospital patients with a death-rate of 7·3 per cent. and I objected to the comparison on the ground that the general hospitals would tend to attract a greater number of intemperate persons more likely to succumb to disease. Dr. Burns retorts to my objection in his letter of Oct. 21st under the following statement: "and non-abstainers of every grade find their way in large numbers into our wards." Granting, Sirs, the accuracy of this statement I still hold that a larger number of intemperate persons, possibly more than would account for higher mortality, would find their way into the general hospitals for the reasons I stated. Dr. Burns must not lose sight of the fact that he is comparing a comparatively small with a considerably larger number, so that in the former case the validity of my contention, although as I hold real, would not, perhaps, to the temperance staff be apparent. May I therefore illustrate my meaning? I happen to recall a phthisical patient whom I attended some years ago, young, of decidedly intemperate and, generally speaking, gay habits. I believe it would be in the highest degree improbable that this patient would either from medical suggestion or from his own initiative seek admission in a temperance hospital. Assuming, however, that he did—an assumption quite possible—this exceptional case would so aid in colouring the limited number of the temperance patients as to render it *apparent* that the class of patients in both hospitals were the same, which they no doubt are in kind but not in degree. In order, therefore, to make a just comparison may I take the liberty of suggesting that the Temperance Hospital should compare, say, their 1337 patients with an equal number of general hospital patients, so as to ascertain in what cases there might be a previous history of intemperance, which would then produce evidence to determine the point whether the intemperate are equal in both hospitals. I am, Sirs, yours faithfully,

Brighton, Nov. 6th, 1905. CLEMENT H. SEBS.

A SEVENTEENTH CENTURY CURE FOR GOUT.

INCLUDED in the Egmont papers, just reported upon by the Historical Manuscripts Commission, is the following extract from a letter written in June, 1659, by one Robert Southwell, of Kinsale, to Sir John Percivale: "I am very sorry to hear that you are suffering from the gout, but hope you may be hereafter acquitted from it. My wife was extremely troubled with it about nine years ago, but has had no touch of it since. All that she laid to it was but fresh cow-dung, an easy medicine, but oft times we despise such things because of the plainness of them."

THE MOTOR-CAR FOR MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—Noticing the letters that have recently appeared in your columns *re* motor-cars, I should like to give my experience. Many medical men in small country practices find the necessary horse and trap a great burden, yet the initial cost and subsequent upkeep of a car deter them from making the change. In April last I bought a Phœnix Trimo, a neat little tricar weighing only 3 hundredweights, with 4½ h.p., air-cooled engine, and have since done all my work upon it besides four long journeys of 140, 120, and two 50 mile runs all done within nine hours. It has never but twice delayed me more than a few moments with "roadside troubles," and each of those times was due to my own fault. It has gone altogether 7000 miles, never refused to start, to get there and to return. I have been through plenty of bad weather, crossing streams which covered my silencer and washed into the forecar. I am rarely without a passenger, which is pleasant; can climb all the heavy hills round my district with ease; can wear a frock suit and, slipping off my spring apron, overall, and fur-lined boots, appear in full canonicals in my patient's bedroom. The cost appears much less than half the old order and the initial cost is only £85 for the machine. I inclose my card which you can hand to any practitioner interested. I am, Sirs, your faithfully,

Nov. 4th, 1905. TRI-CARIST.

A DOOR-PLATE THIEF.

AT the West London police-court on Oct. 29th John Seers was charged with stealing brass door-plates belonging to three medical men practising in that neighbourhood. The prisoner was arrested while coming out of a house in Hammersmith and the door-plates were found in his possession. Detective Sergeant Allen stated that from 30 to 40 door-plates had been taken from houses in the district and he believed the prisoner to be in league with another man who acted as receiver. A sentence of four months' hard labour was passed.

TUBERCULOUS MEAT.

AT Worship-street police-court on Nov. 7th an application was made by a sanitary inspector of the Finsbury borough council for an order to condemn nine pieces of pork which had been seized that day at a sausage factory in St. Luke's. The meat had been deposited for preparation as food but was found to be tuberculous. Mr. Cluer asked where the meat was seized and the inspector replied, "At a sausage factory." Mr. Cluer: "Whose premises? The name need not be hidden." The inspector: "On the premises of Lipton and Co., Limited." The magistrate inspected the meat and gave the required order.

A PIOUS PROPRIETOR.

WE have had a letter from the proprietor of a hydropathic establishment informing us that "by the help of our covenant God, I have been enabled to found a hydropathic establishment at ——." The proprietor hopes that we will kindly take notice "in our widely circulated paper" of the great possibilities of the establishment, which is stated to be enthusiastically spoken of by many members of the medical profession, but there is no documentary evidence in support of this claim. On the whole we think that it would be wiser, in spite of the excellent assistance which the proprietor alleges to have been received in the matter of the foundation, if we waited until we had before us some results upon which to comment, some proof that the establishment is needed, some details as to how the money has been raised, and some information as to the medical treatment that will be forthcoming.

PRACTICE IN THE FRENCH RIVIERA.

REFERRING to an answer to a correspondent on the above subject in THE LANCET of Oct. 28th, p. 1302, a Montpellier graduate writes to us as follows with regard to medical men possessing British qualifications: "In virtue of his English qualification a 'dispense' of the whole of the first examination—which includes anatomy—may be obtained as well as 'scolarité' for a part or the whole of the remaining examinations, this last concession making it possible for him to take one examination after the other without any very long intervals. The chief difficulty certainly lies in obtaining these concessions and the 'dispense' for the 'Baccalauréat.'"

A NEW RELIGIO MEDICI.

Sir Frederick Treves having recently used words bearing the interpretation to laymen that disease was an excellent thing to incur, "C. D." breaks into the following stanza in the columns of the *Westminster Gazette*:—

"Whoe'er thinks well to cure a cold,
Or cough, himself deceives.
No lozenge, linctus, should be sold—
Teste Sir Frederick Treves.

Neuralgic twinge should make you glad;
Sing praises if you sneeze;
Mere microbe slaughter is not sad;
Their deaths are not disease.

The gaping wound should cheer the soul,
Bring joy each broken bone;
The healed are sick—the ill are whole,
Alive the dead alone."

A REPUDIATION.

To the Editors of THE LANCET.

SIRS,—I should be glad if you will allow me to state in your columns that no copies of Dr. C. W. Suckling's recent book were sent to any lay newspaper from my office. The editorial department of a certain London halfpenny paper sent a special messenger here for an advance copy but the application was refused, and the editor was informed that any notice of the book in their paper would be regarded as objectionable and unwelcome alike to the author as a professional man and to myself as a publisher of medical works. Unfortunately notions of etiquette apparently do not prevail in certain quarters.

I am, Sirs, yours faithfully,

Gower-street, London, W.C., Nov. 3rd, 1905. H. K. LEWIS.

CHANGE OF NAME.

To any of our readers whom it may concern we should like to point out that the J. J. Jones Homes at Sandgate are now being brought to the public attention under the altered title of "The Sea-Side Sanatoria, Sandgate." The claims of these homes to be considered sanatoriums in the sense that is implied by the sanatorium treatment of pulmonary tuberculosis have been exhaustively dealt with in the columns of THE LANCET.

TEETOTAL SHIPS.

To the Editors of THE LANCET.

SIRS,—Could any of your readers kindly tell me if there are any ships (sailing or otherwise) which are run on *absolutely* teetotal principles and, if so, to what line the vessels belong?

I am, Sirs, yours faithfully,

Nov. 2nd, 1905. G. F.

RAPIER writes: "A fully qualified man, aged 50, is desirous of applying for a Poor-law appointment as district medical officer. Would his age be likely to render his application futile? He has held a similar appointment some years ago but resigned it."

M. D.—We agree with our correspondent that the method of calling attention to the cash surgery in question is not a particularly dignified one. We do not, however, suppose for a moment that the General Medical Council would consider that its interference was necessary, while about matters of taste members of the medical profession must be to some extent a law to themselves.

Mr. P. V. Timothy is thanked for his letter. The possibility of adopting such a course has not been lost sight of but it presents at least one very great difficulty, the obviously limited circle to which it would appeal in comparison with the instances which he cites.

Adenoid.—The answer to both Question A and Question B is the same. Such fees, unless a previous arrangement has been come to, belong to the principal, but in many cases the principal waives his right to them.

Green Tea.—If there is anything really remarkable about the weight of the infant we shall be happy to hear from the medical man in attendance.

C. A. R.—The correspondence in question did not seem to us to be suitable to our columns.

THE International Jury of the Liége Exhibition have conferred upon Messrs. Burroughs, Wellcome and Co. six grand prizes, three diplomas of honour, and three gold medals for the scientific excellence of their products.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. (3.30Thomas's P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

TUESDAY (14th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

WEDNESDAY (15th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

THURSDAY (16th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.). Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond street (2.30 P.M.).

FRIDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.).

SATURDAY (18th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (13th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Clinical Evening. Cases will be exhibited by Dr. Poynton, Dr. P. Weber, Dr. S. Wynter, Dr. M. Dockrell, Mr. J. Hutchinson, jun., Mr. B. M. Corner, Mr. G. Watson, and others. Cases in attendance at 8 p.m.

TUESDAY (14th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. W. Gordon: The Influence of Posture on the Normal Cardiac Sounds and on the Normal Cardiac Dulness.—Dr. T. J. Horder: Influenzal Endocarditis with an Account of Two Cases in which the Influenzal Bacillus was repeatedly Cultivated from the Blood during Life.

ROYAL SANITARY INSTITUTE (Parkes Museum, Margaret-street, W.).—8 P.M. Discussion on Rural Housing—The Construction of Healthy and Cheap Cottages, the Exhibition at Letchworth (opened by Dr. J. F. J. Sykes and Mr. T. W. Aldwinckle).

MEDICO-LEGAL SOCIETY (22, Albemarle-street, W.).—8.15 P.M. Exhibition of Specimens. Discussion on Consultation among Medical Witnesses previous to Trials (opened by Dr. W. P. Herringham). Among others the Hon. Mr. Justice Walton (President), Prof. C. Allbutt, and Mr. A. Willis are expected to contribute.

ROYAL STATISTICAL SOCIETY (9, Adelphi-terrace, Strand, W.C.).—5 P.M. Paper:—Sir J. A. Baines: Statistical Skimmings from the International Congress.

WEDNESDAY (15th).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Exhibition of Microscope Slides of Tsetse-Fly Dissections, Trypanosomes, &c.

ROYAL METEOROLOGICAL SOCIETY (Institution of Civil Engineers, Gt. George-street, Westminster, S.W.).—7.30 P.M. Papers:—Sir John W. Moore, M.D.: The Rainstorm of August 24th-26th, 1905, in Co. Dublin and Co. Wicklow.—Dr. W. B. Newton: The Aquameter.

SOCIETY OF ARTS (John-street, Adelphi, W.C.).—8 P.M. Inaugural Address: Sir Owen Roberts (Vice-President).

THURSDAY (16th).—CHILDHOOD SOCIETY AND THE BRITISH CHILD-STUDY ASSOCIATION (Parkes Museum, Margaret-street, W.).—8 P.M. Lecture:—Prof. W. D. Halliburton: Physiological Child Life. (Arranged by the British Child-Study Association.)

FRIDAY (17th).—SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN (11, Chandos-street, Cavendish-square, W.).—5.30 P.M. Cases and Specimens will be shown by Dr. E. F. Buzzard, Dr. R. Cautley, Mr. G. Pernet, Mr. S. Stephenson, Mr. P. L. Mummery, and others. Short Communication:—Mr. R. C. Lucas: Calculus removed from the Ureter of a Boy aged 11 years.

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Paper:—Dr. J. L. Todd: The Distribution and Spread of Sleeping Sickness in the Congo Free State, 1903-05.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. E. Dore: Clinique. (Skin.) 5.15 P.M. Dr. E. Cautley: Tuberculous Peritonitis in Children.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Heart Disease—Treatment.

TUESDAY (14th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East).—5 P.M. Dr. N. Moore: John Mirfield (1393) and Medical Study in London during the Middle Ages. (Fitz-Patrick Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. Rankin: Clinique. (Medical.) 5.15 P.M. Dr. A. P. Beddard: Transfusion.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Moullin: Fibroid Tumours of the Uterus.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Tooth: Muscular Atrophy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. D. Forsyth: Some Physical Aspects of Cardiac Failure.

WEDNESDAY (15th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. White: Clinique. (Surgical.) 5.15 P.M. Mr. J. Pardoe: The Treatment of Chronic Urethritis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. H. Cole: Melancholia and its Treatment.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (North-Eastern Fever Hospital, St. Ann's-road, N.).—2.30 P.M. Dr. F. M. Turner: Demonstration on Fevers.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—3 P.M. Dr. Wethered: The Early Diagnosis of Pulmonary Tuberculosis.

THURSDAY (16th).—ROYAL COLLEGE OF PHYSICIANS OF LONDON (Pall Mall East.).—5 P.M. Dr. N. Moore: Dr. Edward Browne (1644-1708) and the Education of Physicians in London in the 17th Century. (Fitz-Patrick Lecture.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Dr. T. W. Eden: The Treatment of Rupture of the Uterus by Abdominal Section.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Keetley: Hernia. (Lecture II.)

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. Corner: The Surgical Treatment of Tabes Mesenterica in Children.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Mr. Handley: Cervical Endometritis.

CHARING CROSS HOSPITAL.—4 P.M. Mr. Waterhouse: Demonstration of Surgical Cases. (Post Graduate Course.)

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN (Leicester-square, W.C.).—6 P.M. Dr. M. Dockrell: Acne Vulgaris in its Three Stages—I., Comedo; II., Indurata; III., Necrotica. (Chesterfield Lecture.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. T. D. Lister: Pre-tuberculous Affections in Early Life. (Post-Graduate Course.)

WESTMINSTER HOSPITAL MEDICAL SCHOOL (University of London) (Caxton-street, Westminster, S.W.).—5 P.M. Lecture:—Dr. B. Abrahams: Applied Physiology. (Lecture VI.)

FRIDAY (17th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thompson: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: X Rays—Diagnosis and Treatment (with lantern slides).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Clinical Lecture:—Dr. Tooth: Muscular Atrophy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Mr. W. Edmunds: Surgical Aneurysms, their Causation, Diagnosis and Treatment.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Nov. 9th, 1905.

Date.		Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. in Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks
Nov.	3	29·56	S.W.	...	69	53	46	48	49	Overcast
,,	4	29·76	S.	0·30	65	53	46	47	48	Fine
,,	5	29·34	S.W.	0·18	54	53	47	48	47	Cloudy
,,	6	29·40	S.W.	0·06	80	53	40	41	42	Cloudy
,,	7	29·66	S.	...	65	51	40	41	41	Foggy
,,	8	29·91	S.W.	...	57	50	35	37	37	Foggy
,,	9	30·04	N.	...	49	47	37	44	45	Overcast

During the week marked copies of the following newspapers have been received:—*Belfast News Letter, Aberdeen Free Press, Army and Navy Gazette, Belfast Evening Telegraph, Islington Gazette, Hampstead Express, Globe, Belfast Whig, Birmingham Weekly Post, Sun, Sheffield Telegraph, Notts Express, Bromley Borough Council, Glasgow Citizen, Yorkshire Observer, Leicester Advertiser, Westmeath Independent, Portsmouth Independent, Newcastle Chronicle, Wimbledon Borough News, Cardiff Mail, Bury Times, Middlesex County Times, Wolverhampton Counties Express, Manchester Guardian, York Herald, Glasgow Herald, Spectator, &c.*

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